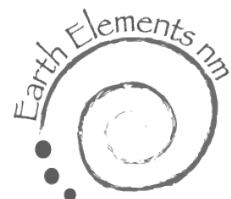


LITTLE RIVER PARK MASTER PLAN

DATA COLLECTION REPORT

PREPARED FOR:
CITY OF WOODSTOCK
12453 HIGHWAY 92
WOODSTOCK, GA
30188

PREPARED BY:



October 21, 2020

October 21, 2020

City of Woodstock
Attention: Michael Huffstetler
Parks & Recreation Director
105 East Main Street, Suite 146
Woodstock, GA 30188

Re: Little River Park Master Plan - Data Collection Report

Michael,

We appreciate the opportunity to submit the Little River Park Master Plan Data Collection Report for your records. This report includes the following sections:

- Executive Summary
- Appendix A: Environmental Assessment/Investigations
- Appendix B: Cultural Resources Inventory
- Appendix C: Floodplain Management Review
- Appendix D: Initial Park Base Map

Please let us know if you have any questions and/or require any additional information.

Sincerely Yours,



Liz Cole, RLA
Project Manager



LITTLE RIVER PARK MASTER PLAN

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PREPARED FOR:
CITY OF WOODSTOCK
12453 HIGHWAY 92
WOODSTOCK, GA
30188

TABLE OF CONTENTS

	<u>SECTION</u>
■ Executive Summary	1
■ Appendix A: Environmental Assessment/Investigations	2
■ Appendix B: Cultural Resources Inventory	3
■ Appendix C: Floodplain Management Review	4
■ Appendix D: Initial Park Base Map	5

EXECUTIVE SUMMARY

The data collection process for the Little River Park Master Plan project included the preparation of inventories that documented the existing on-site cultural and natural resources, as well as floodplain management regulatory requirements. These reports were generated using literature review methods. However, in the case of the environmental assessments and investigations report, the literature review method was supported by a pedestrian survey in order to verify the location of natural occurring habitat and features. The data collection report includes the following:

- **Ecological Assessments/Investigations Little River Park, Woodstock, Georgia**

Prepared By: CCR Environmental, Inc. Natural Resource Consultants

Dated: July 2019 Location: Appendix A

The ecological assessments/investigations included a Federal and State Waters Assessment (FSWA) and Endangered Species Investigation (ESI). These assessments were related to the City's desire to develop a Master Plan for a proposed park (Little River Park) on this property and were intended to identify ecological issues that may need more in-depth, site-specific surveys/investigations for the required environmental permitting, e.g., U.S. Waters delineation for USACE 404 Permitting, related to site development.

Numerous streams were identified in the project area, and except for the Little River, the streams were small and incised with moderate to poor bank stability and extensive canopy. Substrate in most streams consisted primarily of sand, silt, clay, and small gravel with some occasional cobble, and aquatic habitat conditions mostly were moderate to poor. The Little River in the project area was fairly large (approximately 50 – 60 feet wide and 1 – 4 feet deep) and was fairly degraded, i.e., moderate to poor bank stability with severe sedimentation. Several small wetland areas also were observed in the project area, including two wetlands within detention areas, and one large wetland was present in the northeastern corner of the site. Any impacts to these resources may require permitting through the United States Army Corps of Engineers (USACE) 404 Permit process (federal) and the state's and county's Stream Buffer Variance programs. Wetlands are not considered State waters that require a buffer.

Four federally protected species were identified as target species for this study: the federally endangered Indiana bat (*Myotis sodalis*) and gray bat (*Myotis grisescens*), federally-threatened northern long-eared bat (*Myotis septentrionalis*), and federally threatened Cherokee darter (*Etheostoma scotti*). The project appears unlikely to adversely affect the target species; however, agency coordination with GDNR and USFWS will likely occur through any 404 Permitting related to project development, and any mitigation or development restrictions would be spelled out during that process.

- **Cultural Resources Literature Review Little River Park**

Prepared By: Brockington Cultural Resources Consulting

Date: July 2019 Location: Appendix B

The literature review focused on documenting previously recorded archaeological and architectural resources within the project Area of Potential Effect (APE). Research was conducted using the National Register of Historic Places (NRHP) online database maintained by the National Park Service (NPS) and the Georgia Natural, Archaeological, and Historic Resources Geographic Information System (GNAHRGIS). Research was also conducted at the Georgia Archives.

The NRHP online database was reviewed to determine if any NRHP listed properties are located in the APE. GNAHRGIS was reviewed to determine if any previously recorded archaeological sites or architectural resources are located in the APE. This included a review of site forms as well as archaeological and cultural resources survey reports. At the Georgia Archives county histories and cemetery records were reviewed to determine if

EXECUTIVE SUMMARY

any previously recorded cemeteries are located in or near the APE. In addition, Civil War maps such as those provided in *The Official Military Atlas of the Civil War* (Davis et al. 2003) were reviewed to determine if any military activity associated with the Civil War took place within the APE.

The literature review revealed that there are no previously recorded architectural resources located in the APE. There is one archaeological site (9CK1109) in the study area. However, it was determined not eligible for the NRHP. There are 16 other sites located within one km (0.6 mile) of the study area but they are not within the study area boundary.

- **Floodplain Management Review Little River Park**

Prepared By: Dewberry Consultants LLC

Dated: June 2019 Location: Appendix C

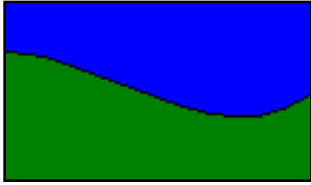
A desktop review of the existing floodplain and topography information was prepared in order to identify the federal and local regulatory constraints pertaining to the development of Little River Park, including the need for potential FEMA coordination and compliance with the Metropolitan North Georgia Water Planning District ordinance as adopted by the City of Woodstock. Existing floodplain studies for the Little River were obtained and reviewed, and recommended considerations were prepared to assist with the development of concepts that can be engineered to comply with local and federal floodplain requirements. Additionally, existing streamflow monitoring stations within the Little River watershed were researched and recommendations are provided for a process to monitor water levels and identify critical stages for potential closure of the park.

The detail and findings presented in these reports was used in the development of the initial park base map, (refer to Appendix D.) Areas identified as environmentally sensitive, having regulatory buffers and/or flood management requirements were located on the field-run site survey data provided by TerraMark. This information will be incorporated into the Little River Park Master Plan and will be used to identify the location of future park amenities.

LITTLE RIVER PARK
MASTER PLAN

DATA COLLECTION REPORT

Appendix A:
Environmental Assessment/Investigations



CCR Environmental, Inc.

Natural Resource Consultants



ECOLOGICAL ASSESSMENTS/INVESTIGATIONS LITTLE RIVER PARK, WOODSTOCK, GEORGIA

Prepared for:
Greenberg Farrow, Inc.
1430 West Peachtree St. NW, Suite 200,
Atlanta, GA 30309

July 2019

1.0 INTRODUCTION

Greenberg Farrow, Inc. (GFI) retained CCR Environmental, Inc. (CCR) to perform some ecological assessments/investigations on approximately 105 acres along the Little River in Woodstock, Georgia (Figure 1). These assessments were related to the City's desire to develop a Master Plan for a proposed park (Little River Park) on this property.

The ecological assessments/investigations included a Federal and State Waters Assessment (FSWA) and Endangered Species Investigation (ESI). The purpose of these studies was to provide GFI/City with information on potentially significant ecological issues related to the proposed development of the site into a park. The assessments /investigations were intended to identify ecological issues that may need more in-depth, site-specific surveys/investigations for the possible required environmental permitting, e.g., U.S. Waters delineation for USACE 404 Permitting, related to site development.

2.0 METHODS

2.1 Federal and State Waters Assessment (FSWA)

Prior to any field work, a desktop review of the site (NWI maps, topo maps, soils maps, etc.) was conducted. Field work consisted of a pedestrian survey of the project site. General locations and extents of federal and state waters (requiring a buffer) were noted and marked on field maps. The project area also was photographed, focusing on any jurisdictional areas.

Jurisdictional Waters of the U.S. are defined by 33 CFR Part 328.3 (b) and are protected by Section 404 of the Clean Water Act (33 USC 1344), which is administered and enforced by the U.S. Army Corps of Engineers (USACE). Delineations generally are performed using the *1987 Corps of Engineers Wetlands Delineation Manual* (USACE, 1987) and further refined by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0)* (UASCE, 2012).

The USACE *Manual* is the legally mandated system for identifying Section 404 jurisdictional wetlands and is based upon satisfying the three criteria of hydrophytic vegetation, hydric soils, and wetland hydrology. Generally, areas must possess field evidence of all three parameters in order to be designated as jurisdictional wetlands.

State waters requiring a buffer are defined through state regulation *391-3-7 Erosion and Sediment Control*, and buffer variances are explained in *391-3-7.05 Buffer Variance Procedures and Criteria*. For warmwater streams, state waters requiring a buffer are those that have stream banks, which are the confining cuts of a stream channel and are identified as the point where the normal stream flow has wrested the vegetation.

2.2 Endangered Species Investigation (ESI)

Prior to any field surveys, a desktop review of federal and state databases for federally protected species that may be impacted by the project was performed. This review included a search of the United States Fish and Wildlife Service's (USFWS) *Information, Planning, and Conservation (IPaC)* System (USFWS, 2019) and the GDNR, Wildlife Resources Division, Nongame Conservation Section's (NCS) *Rare Natural Elements by Location* database (GDNR, 2019). The USFWS' IPaC was the primary source for identifying the target species for this survey.

In addition to the database reviews, an assessment of the project property for suitable habitat for any target species identified during the databases' review was performed during the pedestrian survey of the site for federal and state waters. Representative photographs of terrestrial and aquatic habitat were taken during the pedestrian survey of the property.

3.0 RESULTS

The pedestrian surveys of the site were performed on June 13 and 17, 2019. The weather was mild to hot and mostly sunny. The spring and early summer had near normal rainfall (spotty, however), and about 2.5 inches of rain had fallen in the area in the two weeks prior to June 13; no rain fell between June 13 and 17 (USGS, 2019).

Nearly all of the property was forested, but some small areas were developed. A sewer line was present on both sides of the Little River and extended the entire length of the project; much of the sewer line corridor (approximately 20 feet wide) was maintained. There was a small, abandoned residential area at the western end of the property, and soccer fields (Woodland Park) at the eastern end (Figure 2). There was a small lake on the abandoned residential property, as well as several stormwater detention areas at various locations across the site. Photographs of the project area are presented in Appendix A.

Much of the property lay within the floodplain of the Little River. Sediment deposits, drainage channels, and wrack lines of debris were observed throughout this floodplain area. Vegetation generally was dense throughout the floodplain and consisted of a mixture of wetland and upland plants. Chinese privet (*Ligustrum sinense*), an invasive and non-native plant, was ubiquitous in the floodplain and often was present in dense growths. Other vegetation commonly observed in these areas included muscledwood (*Carpinus caroliniana*), American hop-hornbeam (*Ostrya virginiana*), red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), box elder (*Acer negundo*), American sycamore (*Platanus occidentalis*), green ash (*Fraxinus pennsylvanica*), river birch (*Betula nigra*), flowering dogwood (*Cornus florida*), Japanese honeysuckle (*Lonicera japonica*), muscadine (*Vitis rotundifolia*), poison ivy (*Toxicodendron radicans*), false nettle (*Boehmeria cylindrica*), and common jewelweed (*Impatiens capensis*).

Most of the rest of the property consisted of upland, mixed hardwood and pine forest on moderate to steep slopes down to the floodplain. Many of the same species of vegetation were found in these areas as in the floodplain, but fewer wet-loving species were present. Commonly observed vegetation (besides previously described species) included the following: loblolly (*Pinus taeda*), white oak (*Quercus alba*), water oak (*Quercus nigra*), tulip poplar (*Liriodendron tulipifera*), greenbrier (*Smilax rotundifolia*), blackberry (*Rubus argutus*), Christmas fern (*Polystichum acrostichoides*), trumpet creeper (*Campsis radicans*), and pokeweed (*Phytolacca americana*). In addition to the non-native Chinese privet and Japanese honeysuckle, exotic Chinese wisteria (*Wisteria sinensis*) also was observed in these slope forested areas. Invasive, exotic kudzu (*Pueraria montana*) also was present in the western end of the project area adjacent to the residential areas.

The richest, most-mature community was in the pine-hardwood forest at the western end of the property on slopes south of the river. The under-story was fairly open, and some large (3 – 5 feet diameter breast height [dbh]) trees were observed, including loblolly pines, water oaks, and tulip poplar (see photo-documentation).

Finally, the partially maintained sewer line right-of-ways were dominated by herbaceous vegetation, including the following species: Chinese bush-clover (*Lespedeza cuneata*), meadow fescue (*Festuca elatior*), Queen-Anne's-lace (*Daucus carota*), goldenrod (*Solidago odora*), Bahia grass (*Paspalum notatum*), ragweed (*Ambrosia artemisiifolia*), daisy fleabane (*Erigeron strigosus*), and English plantain (*Plantago lanceolata*).

3.1 FSWA

Numerous streams were identified in the project area (Figure 2). All of the streams appeared to have intermittent to perennial flow. Except for the Little River, the streams were small (approximately 1 – 6 feet wide and 1 – 12 inches deep) and incised (2 – 10 feet) with moderate to poor bank stability and extensive canopy (45 – 85%). Substrate in most streams consisted primarily of sand, silt, clay, and small gravel with some occasional cobble. Aquatic habitat conditions in the streams mostly were moderate to poor with moderate to severe sedimentation. Flows in most streams were low/trickle, and some streams were dry at the time of the survey. The Little River in the project area was approximately 50 – 60 feet wide and 1 – 4 feet deep, had substrate comprised mostly of sand, silt, and some gravel, and was incised (6 – 9 feet) with moderate to poor bank stability. Canopy cover along the Little River through much of the project area ranged from approximately 45 – 65%, and the riparian area consisted mostly of forest with an adjacent, maintained sewer line corridor north of the river.

Some wetland areas were observed in the project area (Figure 2). The largest wetland area (W-1) was present in the northeastern corner of the property. This wetland was located in the floodplain at the toe-of-slope behind a residential area and extended for several hundred feet before draining (via S-1) into the Little River. Most of this wetland area was inundated, had low chroma soils with mottles (10YR 5/3 matrix with 7.5YR 5/1 mottles), and contained mostly hydrophilic plants, including red maple, green ash, arrow

arum (*Peltandra virginica*), Virginia dayflower (*Commelina virginica*), and calico aster (*Aster lateriflorus*). Other, much smaller wetlands were observed south of the Little River, including two wetlands within detention areas (W-4 and W-5). Photo-documentation of all streams and wetlands is presented in Appendix A.

The aforementioned (intermittent and perennial) streams would be considered jurisdictional U.S. Waters, as well as State waters requiring a buffer. Any impacts to these resources would require permitting through the United States Army Corps of Engineers (USACE) 404 Permit process (federal) and the state's and county's Stream Buffer Variance programs. Wetlands are not considered State waters that require a buffer.

If the project proceeds and development is planned, a formal delineation of federal and state waters will be required for the impact areas, with all waters surveyed in and placed on design plans to determine and permit impacts and mitigation.

3.2 ESI

The IPaC identified four federally protected species that may be impacted by the project: the federally endangered Indiana bat (*Myotis sodalis*) and gray bat (*Myotis grisescens*), federally-threatened northern long-eared bat (*Myotis septentrionalis*), and federally-threatened Cherokee darter (*Etheostoma scotti*). These four species were the target species for this ESI. The GDNR's County database included other federally protected species, e.g., amber darter (*Percina antesella*) and finelined pocketbook (*Hamiota altilis*), but these other species were discarded because they did not occur in the project watershed and/or they are believed extirpated from the area. No critical habitat has been designated for any of these four target species. Below are brief descriptions of the four target species.

Indiana bat

The Indiana bat is a migratory bat that moves between seasonal habitats. In the winter, this species hibernates colonially in caves and mines. These winter hibernacula have a constant temperature between 4 and 8 degrees Celsius and a relative humidity above 74%. During the summer, Indiana bats will roost in hollow trees or under loose bark of trees near the edge of the forest, where they can be warmed by the sun. Maternity colonies are formed in a variety of habitats, including forested riparian, floodplain, and uplands (USFWS, 1999). Primary nursery roost trees are generally large hardwoods (> 16 inches diameter) with loose, sloughing bark (USFWS, 1983). Most of these nursery roost trees are dead or dying, although some may be trees with naturally occurring sloughing bark, e.g., shagbark hickory (*Carya cordiformis*) and large white oaks (*Quercus alba*). In addition to primary nursery roosts, Indiana bats also utilize alternate roosts. The alternate roosts have fewer bats and tend to be more shaded and located within forested areas, where relief from excessive temperatures and precipitation can be

found (USFWS, 1999). The alternate roost trees also tend to be large, mature trees (approximately 7 to 33 inches diameter breast height [dbh]) (Romme *et al.*, 1995).

Indiana bats typically forage in closed to semi-open forested habitats and forest edges, where they hunt primarily around, not within, the canopy of trees. They have been found foraging over open fields or bodies of water more than 150 feet from a forest edge, but these foraging activities occur less commonly than in forested sites or along edges (USFWS, 2007). Diet consists primarily of moths and aquatic insects (Kennedy and Harvey, 1983; USFWS, 1983). Estimates of foraging areas sizes have varied widely, ranging from as few as 3 acres to over several square miles (Kennedy and Harvey, 1983; USFWS, 2007).

This species is known to occur throughout much of the midwestern and eastern United States, but the GDNR's range map (2019) only documents this species from three counties in Georgia, *i.e.*, Dade, Walker, and Gilmer counties. NatureServe (2019) also lists this species from these three counties in Georgia. The nearest known maternity colonies are in southern Kentucky (GDNR, 2019). Neither database lists this species from Cherokee County.

Gray bat

Gray bats are very cave-dependent, which they occupy year-round. Different caves, however, are generally used in winter and summer. Caves that trap warm air are selected as maternity caves, while hibernation caves are usually deep vertical caves with large rooms to trap cold air. Less than 5% of available caves in the southeastern U.S. have the right properties of temperature, humidity, and structure to make them suitable for gray bat occupation (GDNR, 2019). Due to their dependence on caves year-round, the most important aspect of recovering and protected this species is the protection of caves.

Mating occurs in September and October, and a single young is born in late May or early June after emergence from hibernation. Young bats just learning to fly need forest cover in the vicinity of the maternity cave in which to forage and take shelter. Males and non-reproductive females form bachelor colonies in summer.

Gray bats feed primarily over large bodies of water near forested shorelines. The bats will forage up to 12 miles or more from their roost sites and appear to prefer traveling within forested areas, which likely makes them less vulnerable to predation, *e.g.*, from owls.

The gray bat is known from 13 states in the U.S. (mostly in the south), extending from Florida to Virginia and westward to Kansas and Oklahoma. In Georgia, gray bats are known to occupy only three caves regularly during the summer in Chattooga, Walker, and Catoosa Counties; however, the GDNR lists this species from 12 counties in the state, including Cherokee County (GDNR, 2019). NatureServe (2019) also lists this species from 12 counties (including Cherokee County) in Georgia.

Northern long-eared bat (NLEB)

The NLEB generally is associated with old-growth forests, where this species relies on interior, intact habitat (forest trees) for breeding, summer roosting, and foraging. Like most bats, it uses sheltered areas (*e.g.*, caves, mines, and tunnels), often with large entrances and passages, for winter hibernacula. These areas provide needed cool and constant temperatures, high humidity, and no air currents. The NLEB has shown a high degree of fidelity to these winter hibernacula.

Most nursing colonies are located in trees in forested areas, where the roost entrances generally are below or within the tree canopy. These colonies use cavities or loose bark in a variety of tree species. Roosts are frequently switched over time.

Summer night roosts are different than day roosts. Males and non-reproductive females typically use caves, mines, and tunnels as night roosts. Juveniles and post-lactating females also use these areas as night roosts later in the summer. Daytime roosts usually include in hollows/crevices or loose bark in trees and in small spaces associated with buildings or other man-made structures.

Suitable summer habitat for NLEB consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and wooded areas containing potential roosts (*i.e.*, live trees and/or snags ≥ 3 inches dbh that have exfoliating bark, cracks, crevices, and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit characteristics of suitable roost trees and are within 1,000 feet of other forested/wooded habitat. Human-made structures, such as buildings, barns, bridges, *etc.* also should be considered potential summer habitat, since NLEB have been observed roosting in these. NLEBs typically occupy their summer habitat from mid-May through mid-August each year.

The NLEB has been fairly wide-spread in the middle and eastern United States (38 states) and across Canada. Its numbers are dropping dramatically, however, due to WNS. The GDNR's *Biodiversity Portal* (2019) lists this species from 21 counties in Georgia, as does NatureServe (2019). Both databases list this species from Cherokee County.

Cherokee darter

Cherokee darters generally inhabit shallow water (0.3 – 1.6 feet) in small to medium warm water creeks (3 – 50 feet wide) with predominately rocky bottoms and are usually found in sections with reduced current, typically runs above and below riffles at the ecotones of riffles and backwaters (Bauer *et al.*, 1995). This species is often associated

with large gravel, cobble, and small boulder substrates, and is rarely found in association with areas comprised of mostly bedrock, fine gravel, or sand. The Cherokee darter is relatively intolerant of moderate to heavy silt deposition and impoundment and is usually most abundant in streams with clear water and clean substrates.

Cherokee darters are endemic to the upper Coosa River system in Georgia, where they are currently known from tributaries (and their drainage systems) to the Etowah River. Populations are found above and below the Allatoona Reservoir (GDNR, 2019). Streams with known populations in Cherokee County include (but are not limited to) Shoal Creek, Sweetwater Creek, Jug Creek, Puckett Creek, Hickory Log Creek, Sharp Mountain Creek, Smithwick Creek, Edward Creek, Riggin Creek, Canton Creek, and Allatoona Creek (Bauer *et al.*, 1995). Cherokee darters also have been reported from the Little River system, but it appears that this species has been extirpated from this system, except for in the extreme headwaters near the eastern edge of Cherokee County (Freeman and Wenger, 2000).

The project appears unlikely to adversely affect the target species. The project area has no suitable habitat for the Cherokee darter, because the streams are too small and/or degraded. No caves or similar structures were observed in the project area that could serve as hibernacula for any of the bat species. There was some potential roosting areas (*i.e.*, large mature trees with some sloughing bark), as well as foraging areas (over Little River and open areas adjacent to forests on site). Given the known ranges and known occurrences for the target bat species, however, it appears unlikely that they would be utilizing the project area. Agency coordination with GDNR and USFWS will likely occur through any 404 Permitting related to project development, and any development restrictions or required mitigation would spelled out during that process.

4.0 SUMMARY

Greenberg Farrow, Inc. retained CCR Environmental, Inc. to perform some ecological assessments/investigations on approximately 105 acres along the Little River in Woodstock, Georgia. The ecological assessments/investigations included a Federal and State Waters Assessment (FSWA) and Endangered Species Investigation (ESI). These assessments were related to the City's desire to develop a Master Plan for a proposed park (Little River Park) on this property and were intended to identify ecological issues that may need more in-depth, site-specific surveys/investigations for the required environmental permitting, *e.g.*, U.S. Waters delineation for USACE 404 Permitting, related to site development.

Numerous streams were identified in the project area, and except for the Little River, the streams were small and incised with moderate to poor bank stability and extensive canopy. Substrate in most streams consisted primarily of sand, silt, clay, and small gravel with some occasional cobble, and aquatic habitat conditions mostly were moderate to poor. The Little River in the project area was fairly large (approximately 50 – 60 feet

wide and 1 – 4 feet deep) and was fairly degraded, *i.e.*, moderate to poor bank stability with severe sedimentation. Several small wetland areas also were observed in the project area, including two wetlands within detention areas, and one large wetland was present in the northeastern corner of the site. Any impacts to these resources may require permitting through the United States Army Corps of Engineers (USACE) 404 Permit process (federal) and the state's and county's Stream Buffer Variance programs. Wetlands are not considered State waters that require a buffer.

Four federally protected species were identified as target species for this study: the federally endangered Indiana bat (*Myotis sodalis*) and gray bat (*Myotis grisescens*), federally-threatened northern long-eared bat (*Myotis septentrionalis*), and federally-threatened Cherokee darter (*Etheostoma scotti*). The project appears unlikely to adversely affect the target species; however, agency coordination with GDNR and USFWS will likely occur through any 404 Permitting related to project development, and any mitigation or development restrictions would be spelled out during that process.

5.0 LITERATURE CITED

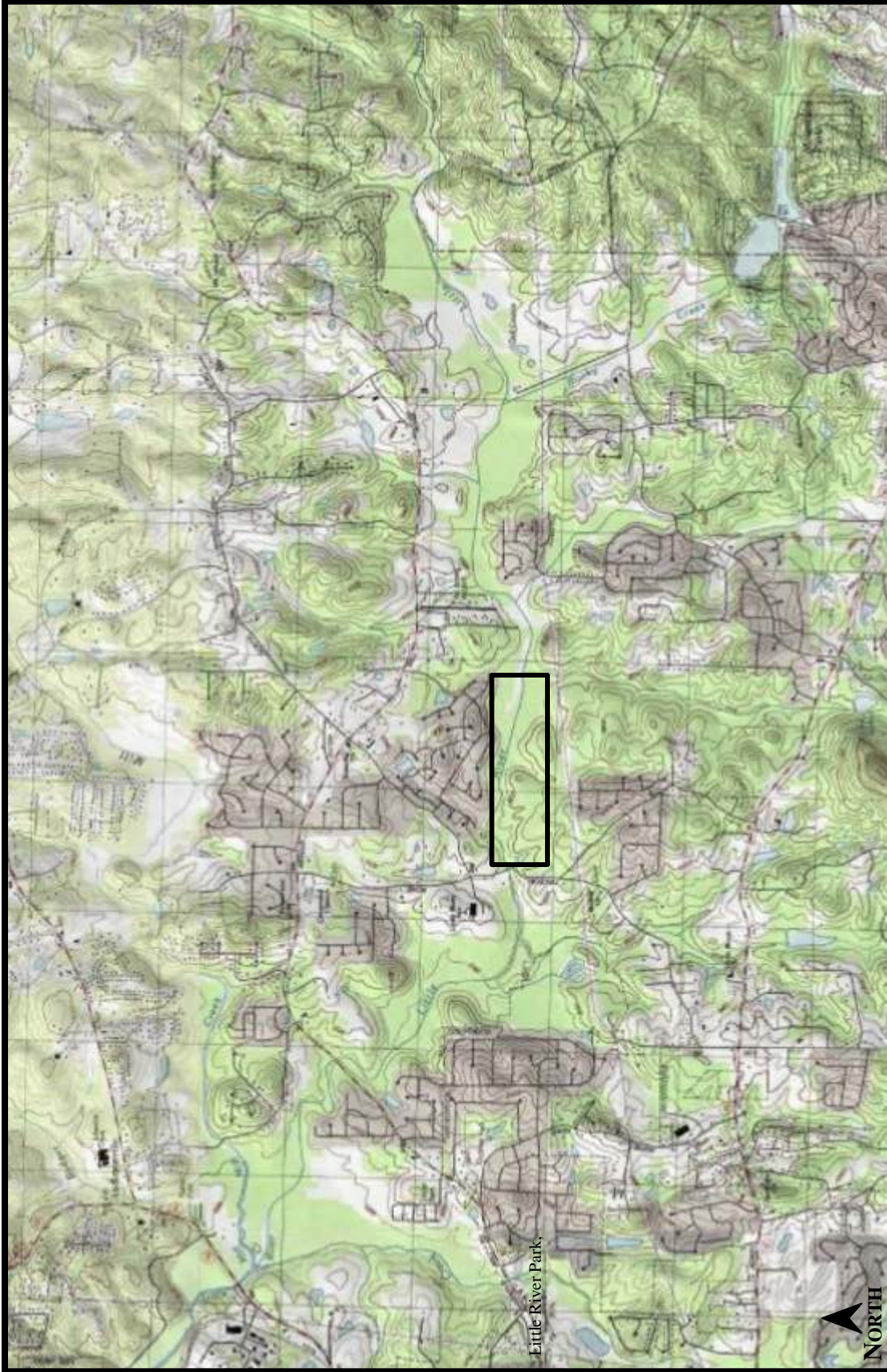
- Bauer, B.H., D.A. Etnier, and N.M. Burkhead. 1995. *Etheostoma (Ulocentra) scotti* (Osteichthyes: Percidae), a New Darter from the Etowah River System in Georgia. Alabama Museum of Natural History Bulletin No. 17.
- Freeman, B.J., and S. Wenger. 2000. Prioritizing Streams for Buffer Preservation and Restoration in the Etowah River Basin. University of Georgia Institute of Ecology. Prepared for the U.S. Fish and Wildlife Service, Athens, GA.
- Georgia Department of Natural Resources (GDNR). 2019. Rare Natural Elements by Species. Available online at <https://georgiabiodiversity.org/>. Accessed June 28, 2019.
- Kennedy, M.L., and M.J. Harvey. 1983. Pages C-1 - C-50 in D.C. Eagar and R.M. Hatcher, editors. Tennessee's Rare Wildlife. Volume I: Mammals. Tennessee Wildlife Resource Agency, Nashville, TN.
- NatureServe. 2019. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, VA. <http://www.natureserve.org/explorer>. (Accessed June 28, 2019).
- Romme, R.C., K. Tyrell, and V. Brack, Jr. 1995. Literature Summary And Habitat Suitability Index Model: Components of Summer Habitat for the Indiana Bat, *Myotis sodalis*. Report submitted to the Indiana Dept. of Natural Resources, Division of Wildlife, Bloomington, Indiana, by 3D/Environmental, Cincinnati, Ohio. Federal Aid Project E 1 7, Study No. 8.
- USACE (United States Army Corps of Engineers). 1987. Wetlands Delineation Manual – Wetlands Research Program Technical Report Y-87-1.
- USACE. 2012. Regional Supplement to the Corps of Engineers' Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0). ERDC/EL TR-12-9. Wetlands Regulatory Assistance Program, U.S. Army Engineer Research and Development Center, Vicksburg, MS.
- USFWS (United States Fish and Wildlife Service). 1983. Recovery Plan for the Indiana Bat. Region 4, Atlanta, GA.

USFWS. 1999. Agency Draft Indiana Bat Revised Recovery Plan. Region 3, Fort Smelling, MN.

USFWS. 2007. Indiana Bat (*Myotis sodalis*) Draft Recovery Plan: First Revision. Region 3, Fort Smelling, MN.

USFWS. 2019. Information, Planning, and Conservation System. <http://ecos.fws.gov/ipac/>.

USGS (United States Geologic Survey). 2019. <http://waterdata.usgs.gov/ga/nwis/rt>.



Little River Park,



NORTH

Source: Earth Point, 2019



Key



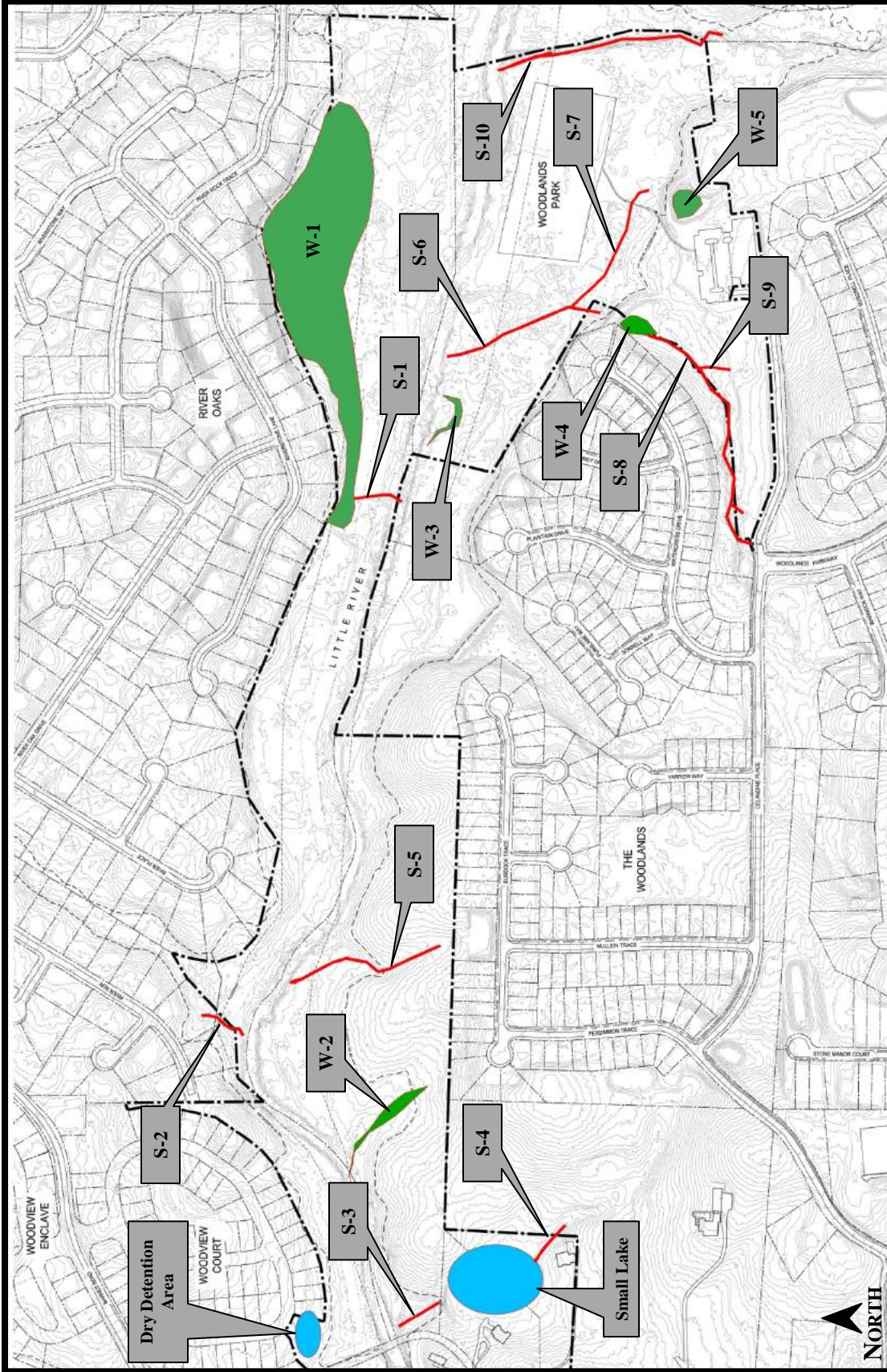
Project Location

June 2019

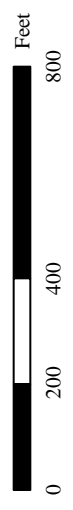
Figure 1. Project Location Map
 Little River Park, Ecological Assessments/Investigations
 Woodstock, Cherokee County, Georgia



CCR ENVIRONMENTAL, INC.
 NATURAL RESOURCE CONSULTANTS



Source: Greenberg Farrow



June 2019

Figure 2. Jurisdictional Waters Map
 Little River Park, Ecological Assessments/Investigations
 Woodstock, Cherokee County, Georgia



CCR ENVIRONMENTAL, INC.
 NATURAL RESOURCE CONSULTANTS

**APPENDIX A –
PHOTO-DOCUMENTATION OF PROJECT AREA**

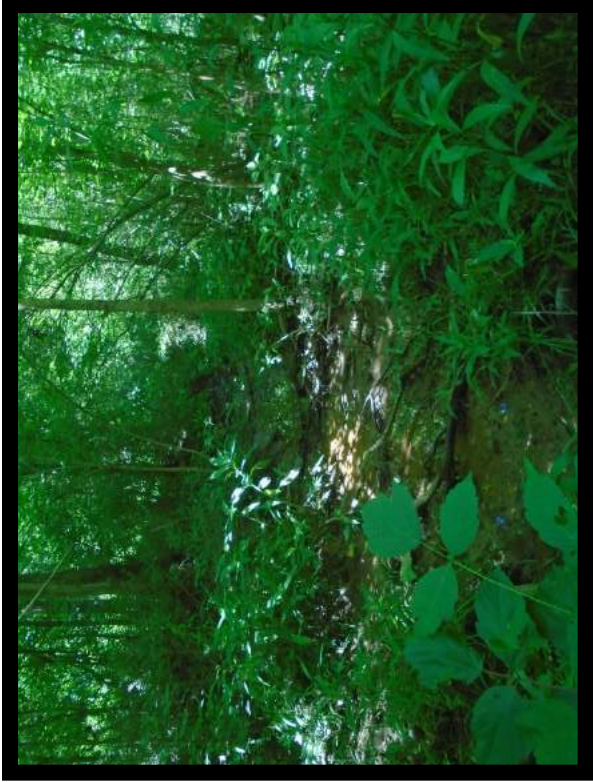


Photo 1. Stream S-1



Photo 2. Stream S-2



Photo 3. Stream S-3



Photo 4. Stream S-4



Photo 5. Stream S-5



Photo 6. Stream S-6



Photo 7. Stream S-7



Photo 8. Stream S-8



Photo 9. Stream S-9



Photo 10. Stream S-10



Photo 11. Wetland W-1



Photo 12. Wetland W-2



Photo 13. Wetland W-3



Photo 14. Wetland W-4 (in detention area)



Photo 15. Wetland W-5 (in another detention area)

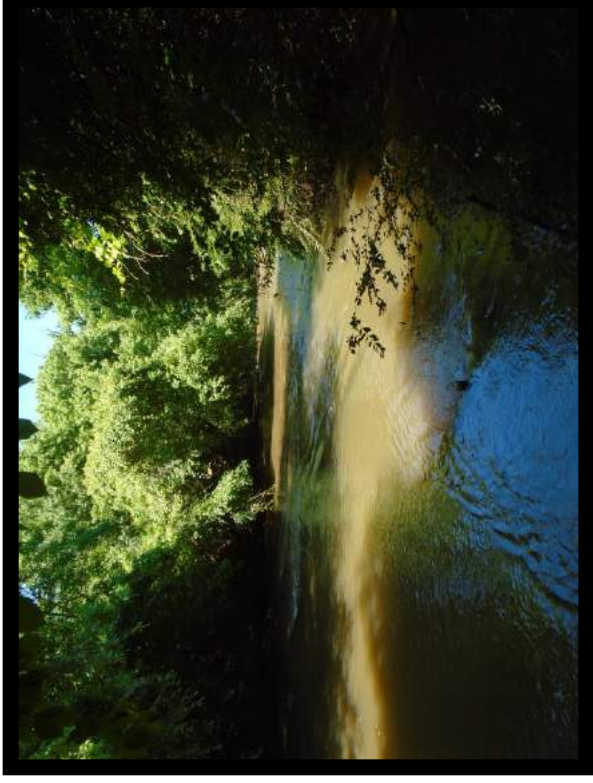


Photo 16. View of Little River in study area



Photo 17. Representative view of upland areas forested floodplain (Note dense Chinese privet.)

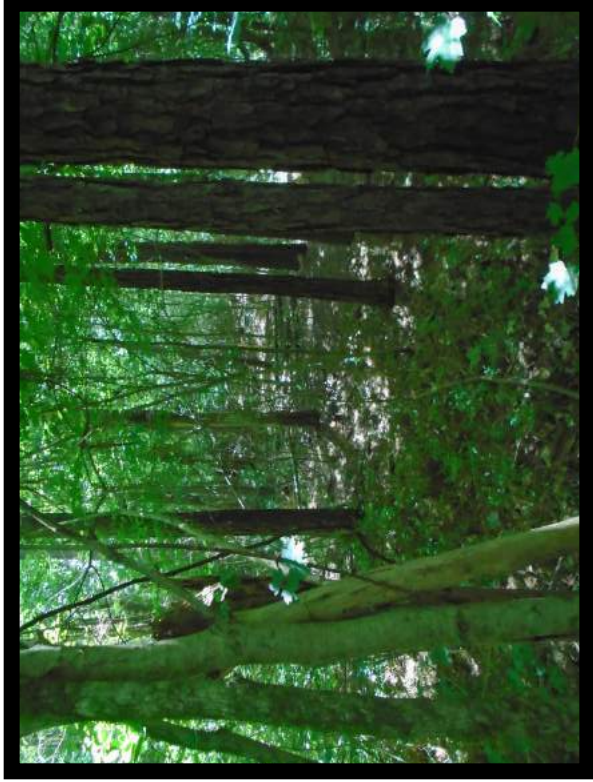


Photo 19. Representative view of forested upland area on slope (north side of Little River)



Photo 18. View through sewerline r-o-w on north side of the Little River in study area (Note dirt path in background.)



Photo 20. View through sewerline r-o-w on north side of the Little River at western end of property (Note mowed path through vegetation.)



Photo 21. Representative view of fairly mature forest on south side of Little River (Note open under-story.)



Photo 22. View through sewerline r-o-w on south side of the Little River in study area (Note overgrown vegetation.)



Photo 23. View of old abandoned car in study area behind The Woodlands' neighborhood



Photo 24. View of stacked rock wall near existing parking lot for Woodlands Park soccer fields



Photo 25. View of sloughing bark on white oak tree on the property



Photo 26. View of large, mature water oak on property behind The Woodlands' neighborhood



Photo 27. View of large, mature loblolly pine on property behind The Woodlands' neighborhood



Photo 28. View of pond in abandoned residential area at western end of property

LITTLE RIVER PARK MASTER PLAN

DATA COLLECTION REPORT

Appendix B: Cultural Resources Inventory

July 3, 2019

Ms. Liz Cole RLA
Senior Project Manager
GreenbergFarrow
1430 West Peachtree St. NW
Suite 200
Atlanta, GA 30309

Re: Little River Park Literature Review

Dear Ms. Cole,

From June 17 to June 20, 2019, Brockington and Associates, Inc. (Brockington) conducted a cultural resources literature review for the proposed Little River Park Master Plan property in Cherokee County, Georgia (Figures 1.1 and 1.2). This survey was conducted as an act of due diligence for the City of Woodstock, Georgia while under contract with Greenberg Farrow Architecture, Inc. The 105-acre (42-hectare [ha]) Little River Park study area consists of the existing 36-acre (14.5 ha) Greenprints Park property and four tracts of land recently acquired by the City of Woodstock which total 69 acres (27.9 ha) (Figure 1.3).

The Area of Potential Effect (APE) for this study consists of the 105-acre (42-ha) study area and the viewshed. Previously recorded archaeological sites and cultural resources surveys conducted within one kilometer (km) (0.6 mile) of the study area are also included in the literature review.

The literature review identified one previously recorded archaeological site in the study area (9CK1109). It is located in the 34-acre (13.7-ha) tract recently acquired by the City of Woodstock northeast of Celandine Place Road. Site 9CK1109 was recommended ineligible for the NRHP. There are also 16 previously recorded archaeological sites within one km (0.6 mile) of the study area. However, there are no previously recorded architectural resources located within the study area or within the study area viewshed.

Literature Review Methods

The literature review focused on documenting previously recorded archaeological and architectural resources within the project APE. Research was conducted using the National Register of Historic Places (NRHP) online database maintained by the National Park Service (NPS) and the Georgia Natural, Archaeological, and Historic Resources Geographic Information System (GNAHRGIS). Research was also conducted at the Georgia Archives.

The NRHP online database was reviewed to determine if any NRHP listed properties are located in the APE. GNAHRGIS was reviewed to determine if any previously recorded archaeological sites or architectural resources are located in the APE. This included a review of site forms as well as archaeological and cultural resources survey reports. At the Georgia Archives county histories and cemetery records were reviewed to determine if any previously recorded cemeteries are located in or near the APE. In addition, Civil War maps such as those provided in *The Official Military Atlas of the*

Civil War (Davis et al. 2003) were reviewed to determine if any military activity associated with the Civil War took place within the APE.

Literature Review Results

The literature review revealed that there are no previously recorded architectural resources located in the APE. In addition, only one previous cultural resources investigation has been conducted in the study area. It was a survey conducted in 2001 for the proposed Hendrix Tract residential development (Webb and Quirk 2001). While most of the 541-acre (219-ha) survey tract was located south of the current study area, it included the 34-acre (13.7-ha) tract recently acquired by the City of Woodstock northeast of Celandine Place Road. One archaeological site recorded in 2001 (9CK1109) is located in the 34-acre (13.7-ha) tract. Site 9CK1109 is a general prehistoric lithic scatter and late nineteenth century-to-mid twentieth century house site that was recommended ineligible for the NRHP. The Georgia State Historic Preservation Officer (SHPO) and the US Army Corps of Engineers (USACE), Savannah District, concurred with this recommendation (Webb and Quirk 2001; USACE 2002). Table 1.1 provides a list of previously recorded cultural resources within one km (0.6 mile) of the study area. Figure 1.4 shows locations of previously recorded cultural resources within one km (0.6 mile) of the study area.

The Webb and Quirk 2001 survey also recorded 10 other sites that are within one km (0.6 mile) of the study area. Eight of the sites were recommended ineligible for the NRHP and two sites, 9CK110 and 9CK1114 were recommended potentially eligible for the NRHP. The Georgia SHPO and the USACE, Savannah District, concurred with this recommendation (Webb and Quirk 2001; USACE 2002).

Site 9CK110 is a general prehistoric lithic scatter and late nineteenth century-to-mid twentieth century house site located immediately east of the study area in a greenspace for a residential neighborhood (Figure 1.4). Site 9CK1144 is a Woodland prehistoric lithic and ceramic scatter and twentieth century artifact scattered located in a transmission line corridor and wooded area immediate south of the study area. While a small buffer area for the site extends into the 34-acre (13.7-ha) tract that is part of the study area, the site (where artifacts were recovered) is located outside the study area. Figure 1.5 is an aerial map showing the boundary of Site 9CK1144 in relation to the study area boundary.

There are six other previously recorded sites located within one km (0.6 mile) of the study area. None of the sites are immediately adjacent to the study area and all were recommended ineligible for the NRHP or have an unknown NRHP eligibility (Table 1.1 and Figure 1.4). While a cell tower survey was conducted within one km (0.6 mile) of the study area (Thomas 2006), no sites were identified (Figure 1.4). In addition, what is now the study area does not appear on Civil War period maps and there are no previously recorded sites associated with the Civil War located in the study area or within one km (0.6 mile) of the study area.

Summary

The literature review revealed that there are no previously recorded architectural resources located in the APE. There is one archaeological site (9CK1109) in the study area. However, it was determined not eligible for the NRHP. There are 16 other sites located within one km (0.6 mile) of the study area but they are not within the study area boundary. If you have any questions, please call me at (678) 638-4128, or email me at mikereynolds@brockington.org.

Sincerely,

A handwritten signature in cursive script that reads "Mike Reynolds".

Mike Reynolds
Historian/Archaeologist
Brockington and Associates, Inc.

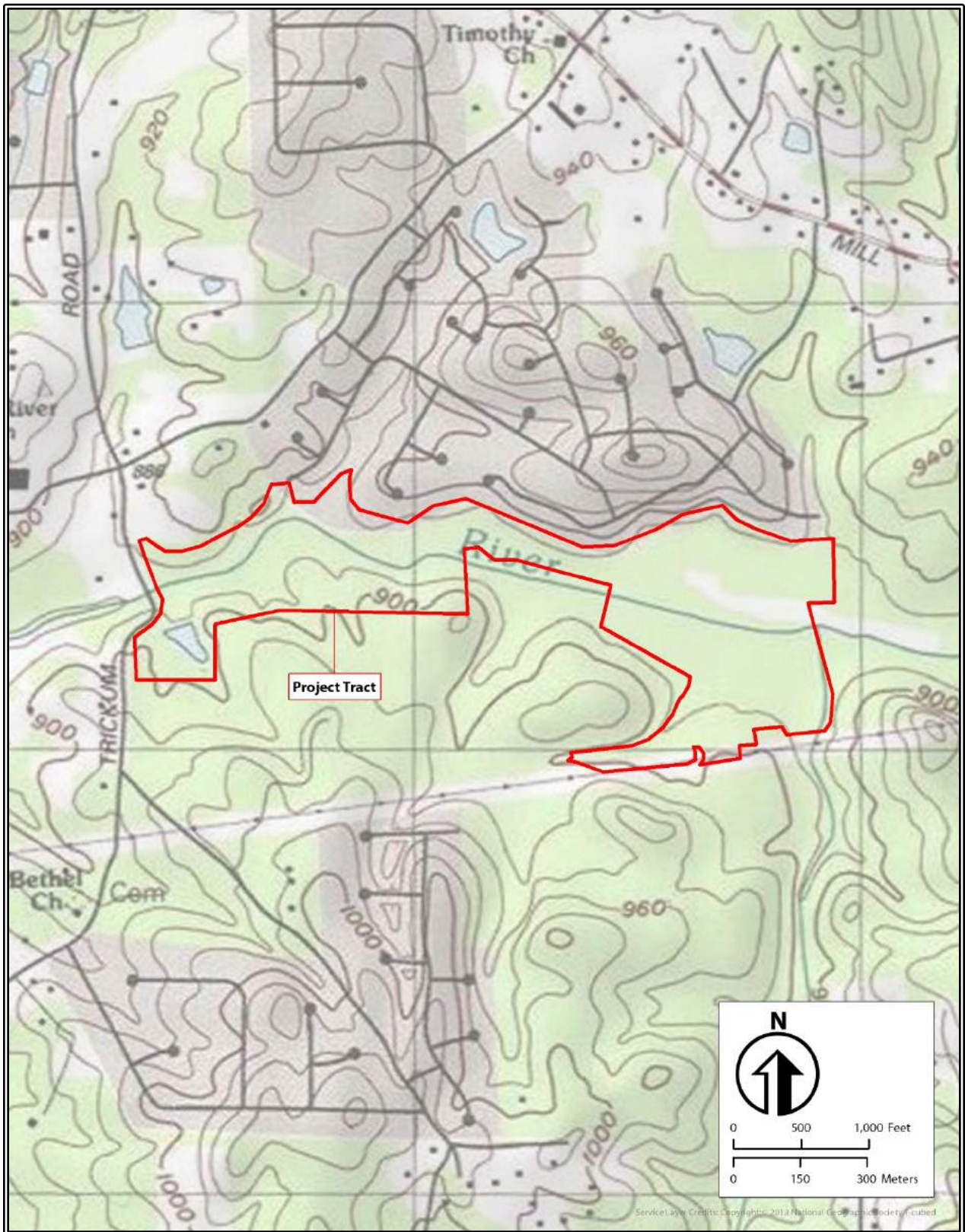


Figure 1.1 Location of the study area (1992 *Mountain Park, GA* 7.5-minute USGS topographic quadrangle).

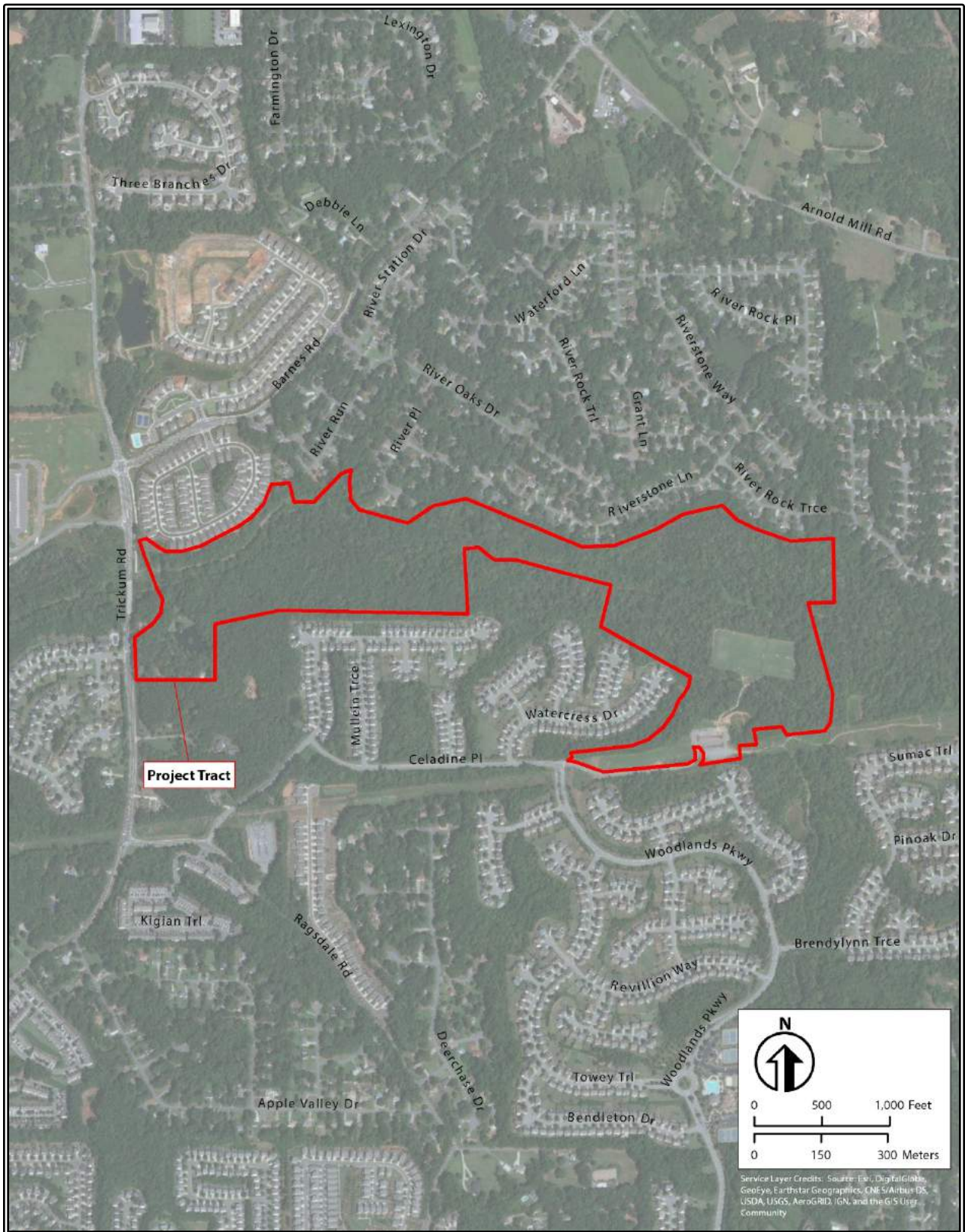


Figure 1.2 Aerial location map of the study area (ESRI 2019).



Figure 1.3 Aerial map of study area tracts.

Table 1.1. Previously recorded archaeological sites within one km (1.6 m) of the APE.

Site Number	Site Type	Cultural Period	Reference	NRHP Recommendation
9CK128	Prehistoric lithic scatter	General Prehistoric	Bates 1983	Ineligible
9CK129	Prehistoric lithic and ceramic scatter	Late Archaic, Middle and Late Woodland, Early Mississippian	Amateur/property owner and DNR	Unknown
9CK397	Prehistoric lithic scatter	General Prehistoric	Ledbetter et al.1987/USACE 1991	Unknown
9CK398	Prehistoric Lithic Scatter	General Prehistoric	Ledbetter et al.1987/ USACE 1991	Ineligible
9CK663	Prehistoric artifact scatter	General Archaic, Middle and Late Woodland	Amateur	Unknown
9CK1100	Prehistoric Lithic Scatter	General Prehistoric	Webb and Quirk 2001	Ineligible
9CK1102	14 Rock Piles	Likely 19 th -20 th centuries	Webb and Quirk 2001	Ineligible
9CK1103	Historic house site (bulldozed)	20 th century	Webb and Quirk 2001	Ineligible
9CK1104	Prehistoric lithic scatter and Historic ceramic scatter	Late Archaic and late 19 th -to-mid 20 th century	Webb and Quirk 2001	Ineligible
9CK1105	Prehistoric lithic scatter and Historic artifact scatter	Middle Archaic, Late Archaic, late 19 th -to-mid 20 th century	Webb and Quirk 2001	Ineligible
9CK1107	Historic artifact scatter near Historic House	Early -to-mid-20 th century	Webb and Quirk 2001	Ineligible
9CK1108	Prehistoric lithic scatter and Historic house site	General Prehistoric and late 19 th -to-mid 20 th century	Webb and Quirk 2001	Ineligible
9CK1109*	Prehistoric lithic scatter and Historic house site	General Prehistoric and late 19 th -to-mid 20 th century	Webb and Quirk 2001	Ineligible
9CK1110	Prehistoric lithic scatter and Historic house site	General Prehistoric and late 19 th -to-mid 20 th century	Webb and Quirk 2001	Potentially Eligible
9CK1118	Three Rock Piles	Likely 19 th -20 th centuries	Gresham 2000	Ineligible
9CK1144	Prehistoric lithic and ceramic scatter and Historic artifact scatter	General Woodland and 20 th century	Webb and Quirk 2001	Potentially Eligible
9CK1145	Historic Stone wall	Late nineteenth-early twentieth centuries	Webb and Quirk 2001	Ineligible

* Inside study area.

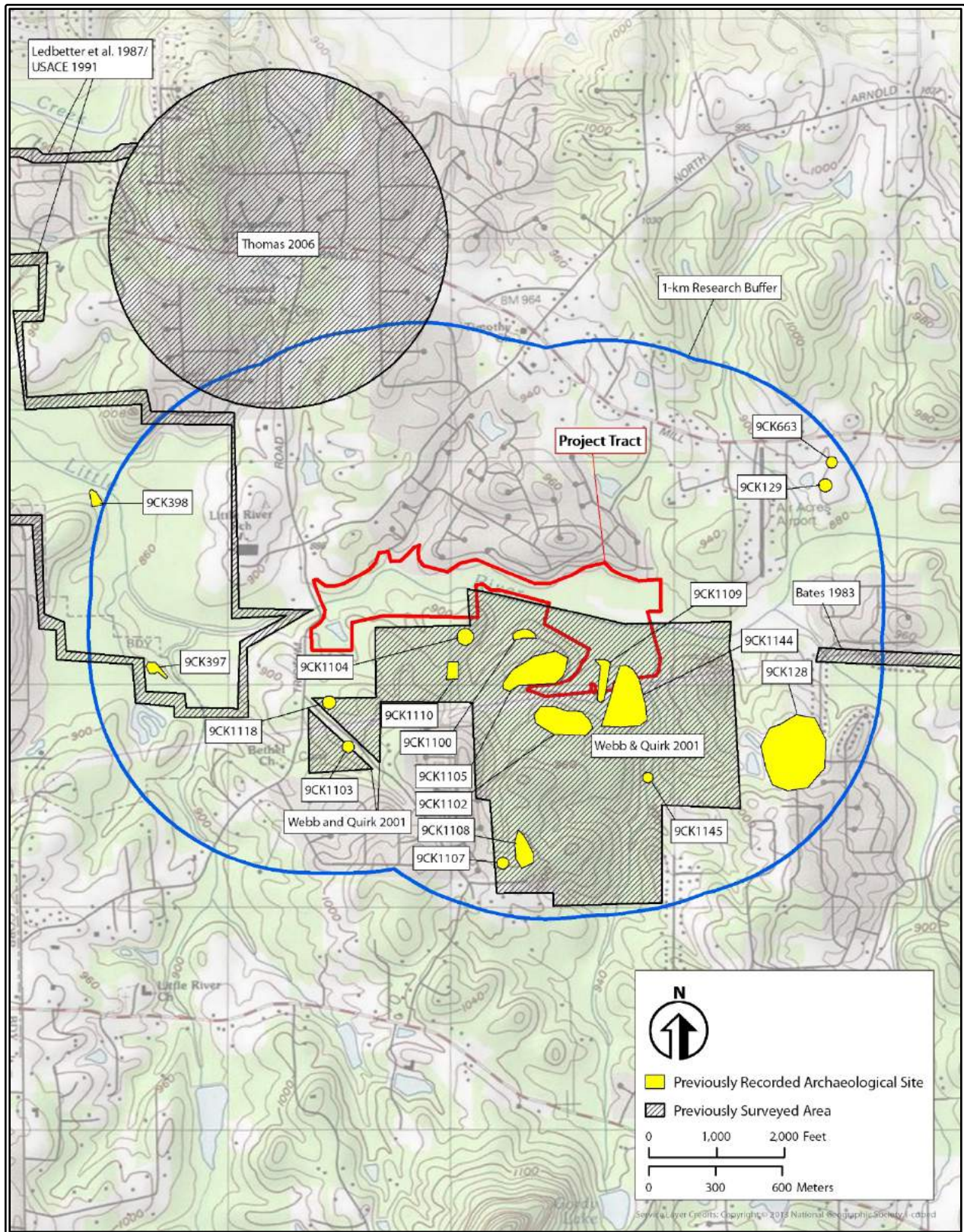


Figure 1.4 Locations of previously recorded cultural resources within one km (0.6 mile) of the APE (1992 Mountain Park, GA 7.5-minute USGS topographic quadrangle).

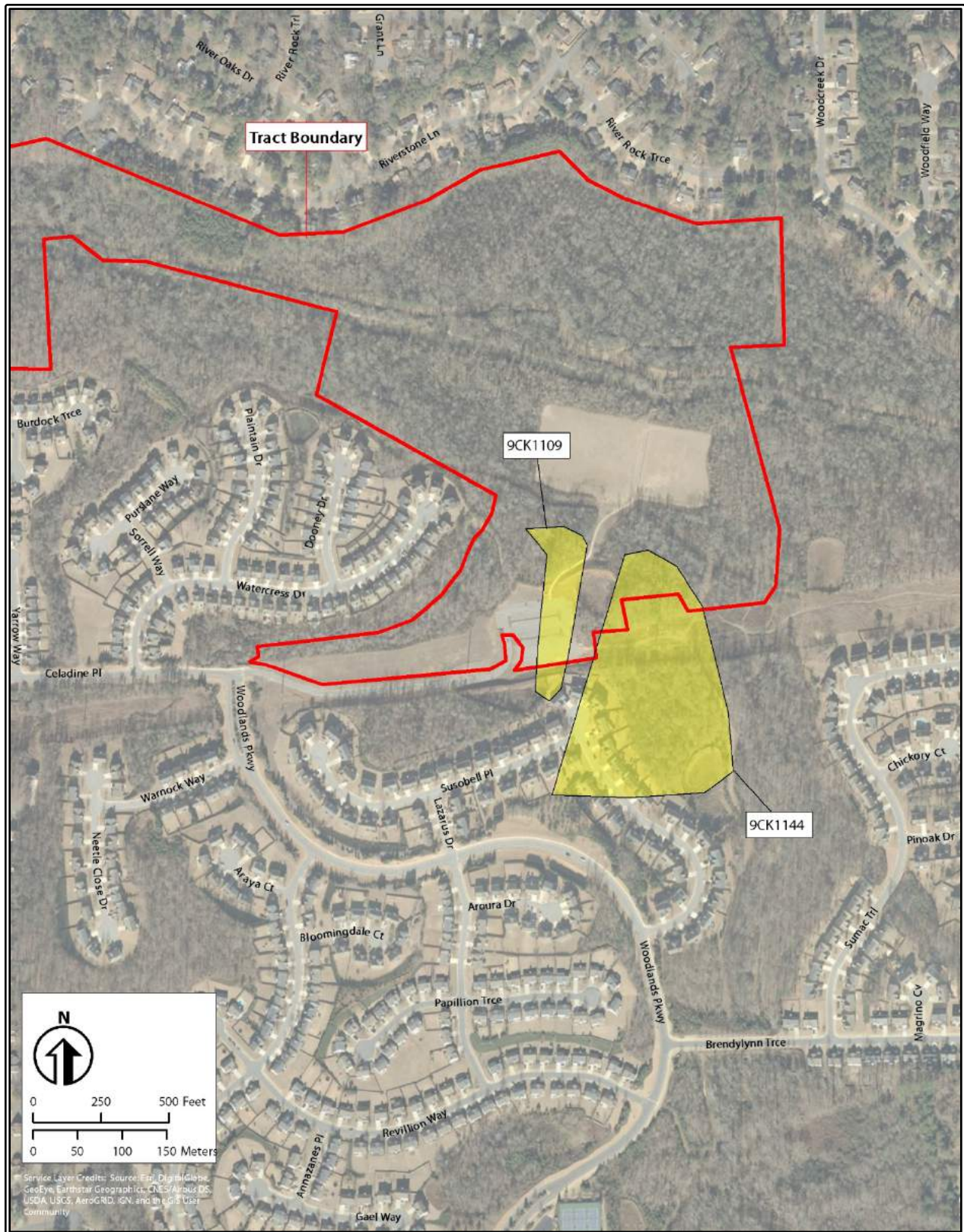


Figure 1.5 Locations of 9CK1144 and 9CK1109 in relation to the study area (Esri 2019).

References Cited

Bates, James F.

1983 *Archaeological Survey: Woodstock-Alpharetta Proposed Transmission Line, Cherokee and Fulton Counties, Georgia*. Report prepared for Oglethorpe Power, Atlanta, Georgia. Report prepared by Claude Terry & Associates, Inc., Atlanta Georgia.

Davis, Major George B., Lesley J. Perry, Joseph W. Kirkley, and Captain Calvin D. Cowles

2003 *The Official Military Atlas of the Civil War*. Reprint of 1891-1895 edition, Government Printing Office, Washington, D.C. Fairfax Press, NY.

Environmental Systems Research Institute, Inc. (ESRI)

2019 ArcView GIS Software, version 3.1. Redlands, California
Official website: <http://www.esri.com/about-esri>. Accessed July 2019.

Gresham, Thomas H

2000 *Archaeological Survey of the Proposed Ragsdale Road 230 kV Substation, Cherokee County, Georgia*. Report prepared by Southeastern Archaeological Services, Athens, Georgia.

Ledbetter, Jerald R., with W. Dean Wood, Karen G. Wood, and Robbie F. Ethridge

1987 *Cultural Resources Survey of Allatoona Lake Area*. Volumes I and II. Report prepared for the US Army Corps of Engineers, Mobile District. Report prepared by Southeastern Archaeological Services, Athens, Georgia.

Scaife, William R.

1993 *The Campaign for Atlanta*. McNaughton & Gunn, Inc. Saline, Michigan.

Thomas, Larissa A.

2006 *Cultural Resource Literature Search for Seven Proposed Cell Tower Sites Across Georgia*. Report prepared for Martin & Associates Environmental Services, Jacksonville Florida. Report prepared for TRC Atlanta, Georgia.

US Army Corps of Engineers (USACE)

1991 *Allatoona Lake Georgia Historic Properties Management Plan*. Prepared by *The Natural Resources Branch Operations Division and The Environmental Resources Planning Section Planning Division Mobile District U. S. Army Corps of Engineers*.

2002 *Conditional, Determination of No Adverse Effect on Archaeological Sites 9CK1110 and 9CK1144 Resulting from the Pulte Homes Corporation, Hendrix Tract Development, Cherokee County, Georgia Da Permit Number 200107240 (200006990). HP010514004*.

United States Geological Survey (USGS)

1992 *Mountain View, GA 7.5-minute USGS topographic quadrangle*.

Webb, Robert S. and Phillip W. Quirk

2001 *Phase I Cultural Resources Survey, Proposed Hendrix Tract Development Site, Cherokee County, Georgia (HP010514004)*. Report prepared for Travis Pruitt & Associates, Norcross, Georgia. Report prepared by R. S. Webb and Associates, Holly Springs, Georgia.

LITTLE RIVER PARK MASTER PLAN

DATA COLLECTION REPORT

Appendix C: Floodplain Management Review



June 3, 2019

GreenbergFarrow
Attn: Elizabeth Cole, Senior Project Manager
1430 West Peachtree St. NW, Suite 200
Atlanta, GA 30308

RE: Little River Park, City of Woodstock, GA

Dear Ms. Cole,

Dewberry has performed a desktop review of the existing floodplain and topographic information, in order to summarize the federal and local floodplain constraints pertaining to the development of the Little River Park, in Woodstock, GA, including the need for potential Federal Emergency Management Agency (FEMA) coordination and compliance with the Metropolitan North Georgia Water Planning District model flood damage prevention ordinance as adopted by the City of Woodstock. An overview of the project site and effective FEMA floodplain is included as an attached to this memo.

GreenbergFarrow provided Dewberry with initial concepts for the proposed development as well as existing conditions survey data for the project site. It is Dewberry's understanding that the proposed park development includes the following features: two new pedestrian bridges (one in the vicinity of Tricum Road, and other in the vicinity of the existing playing fields), boardwalks with fishing piers, a canoe/kayak boat ramp, and a multi-use trail on the north side of Little River. These proposed changes will be required to comply with both federal and local floodplain requirements. Based on discussions with GreenbergFarrow, it is assumed that no new buildings will be constructed within the Special Flood Hazard Area (SFHA).

Federal Regulatory Requirements Pertaining to FEMA SFHA

Since the Little River through the City of Woodstock and the area of the proposed Little River Park lies within a FEMA Zone AE floodplain with floodway it requires compliance with 44 CFR 60.3(d). This will require hydraulic modeling to demonstrate that any fill, new construction, substantial improvements, or grading within the floodway including the construction of bridge crossings results in 0.00 foot of rise during the base flood (1% annual chance) discharge. This includes the proposed bridges, boardwalks, boat ramp, and multi-use trail, which should be incorporated into the HEC-RAS model to demonstrate a no-rise condition. The effective hydraulic model for Little River was developed in 2015 by Dewberry for the Georgia Department of Natural Resources using HEC-RAS 1D steady state modeling, and can be utilized to perform the required analysis for compliance.

In the event that the proposed redevelopment cannot meet a no-rise condition, 44 CFR 60.3(d)(4) would require a Conditional Letter of Map Revision (CLOMR) application to be submitted to FEMA, and additionally would require adherence to 44 CFR 65.12. This would include an evaluation of alternatives which would not cause any increase in base flood elevation and why they are not feasible, notification to individual homeowners explaining the proposed changes to the base flood elevation on their property, certification that no structures are impacted, and coordination with and approval of the City of Woodstock and Cherokee County (if applicable). In the event of any changes in the base flood elevation, 44 CFR 65.3

also requires upon completion of the project that as-built certifications should be provided to initiate a final map revision through a Letter of Map Revision (LOMR). In addition to any cost associated with developing the modeling and preparing documentation for a CLOMR and LOMR, FEMA requires a fee of \$6,750 and \$8,250 to review and process a CLOMR and LOMR submittal respectively.

Local Floodplain Ordinance Requirements

Based on the Floodplain Management/Flood Damage Prevention Standards of the City of Woodstock's Land Development Code dated July 19, 2018, evaluations of both the existing Base Flood Elevation and Future-Conditions Flood Elevation are required. These are in addition to FEMA regulations. A copy of these Standards is attached for your reference.

An engineering study will be required for any development that occurs within the Future-Conditions Floodplain, demonstrating that any development will not result in: raising the Base Flood Elevation or Future-Conditions Flood Elevation equal to or greater than 0.01 foot; any reductions in Base Flood or Future-Conditions flood storage capacity; any changes to flow characteristics; or creating hazardous or erosion producing velocities. As part of the Metropolitan North Georgia Water Planning District, communities were required to develop Future Conditions modeling, and it is Dewberry's understanding that the City of Woodstock and Cherokee County have completed these studies. In order to conduct the engineering study, the Future-Conditions flows developed from the City's model could be utilized and incorporated into the Little River effective hydraulic model, which currently does not include any Future-Conditions analysis. Additional detail should be added to this model to include the proposed new structures, grading, and changes in land use based on the proposed development plan. It is also recommended that in addition to a hydraulic analysis of any concept bridges designs that a scour analysis be included in the engineering study to ensure that the bridge foundations are adequately designed to resist failure due to erosion and scour. It is anticipated that this process would require several design iterations to make adjustments to the plans and structures until the models can demonstrate compliance with local and federal requirements.

These local floodplain ordinance requirements are applicable for drainage areas greater than 100-acres, in addition to Little River. A cursory review of the project site identified four additional flooding sources that may require analysis beyond the Little River to meet these requirements. These are shown on Appendix A as Tributaries 1, 2, 3, and 4. Any proposed changes that may impact these reaches should be studied utilizing the City's hydraulic models to ensure no increase in Base Flood or Future-Conditions Flood elevation or loss of flood storage capacity.

The Floodplain Management/Flood Damage Prevention Standards prohibit any encroachments into the floodway, with the exception of bridges, culverts, roadways, and utilities, unless the encroachments do not result in any increase to the pre-project Base Flood Elevations, Floodway elevations, or Floodway widths during the base flood discharge. It therefore is recommended that if possible, any bridge design spans the floodway entirely. Any significant changes to the floodplain or alterations of the floodway will require a CLOMR issued by FEMA. The results of this engineering study should be included in the required Floodplain Management Plan as described in Section 13.320 of Woodstock's Floodplain Management/Flood Damage Prevention Standards.

Stream Gage Review

Approximately 3 miles downstream of the project limits, an active USGS gage (02392780 Little River at GA 5, Near Woodstock, GA), provides real time gage height and discharge information, with flood stage categories developed by the National Weather Service (NWS). Using these flood stage categories, real time data, and the revised hydraulic modeling, critical stages for potential park closure to ensure public safety can be developed. However, since this gage is located downstream of the proposed site, it may only provide a delayed warning of flooding, as opposed to real time gage information from an upstream gage which could provide more advanced warnings. A potential partnership with the USGS to install gages upstream of the proposed project could provide greater insight into the flood risks and provide better information for decision making for potential park closures, since none exist currently.

It should also be noted that this USGS gage along Little River at GA 5, Near Woodstock, GA is not part of the National Weather Service Advanced Hydrologic Prediction Service (AHPS), which provides real time flood forecasts, but rather only provides observed data. A potential partnership with the NWS to enable AHPS forecasting for any existing and potential new gages along Little River can provide even more advanced warning for decision making regarding the public safety at the proposed park.

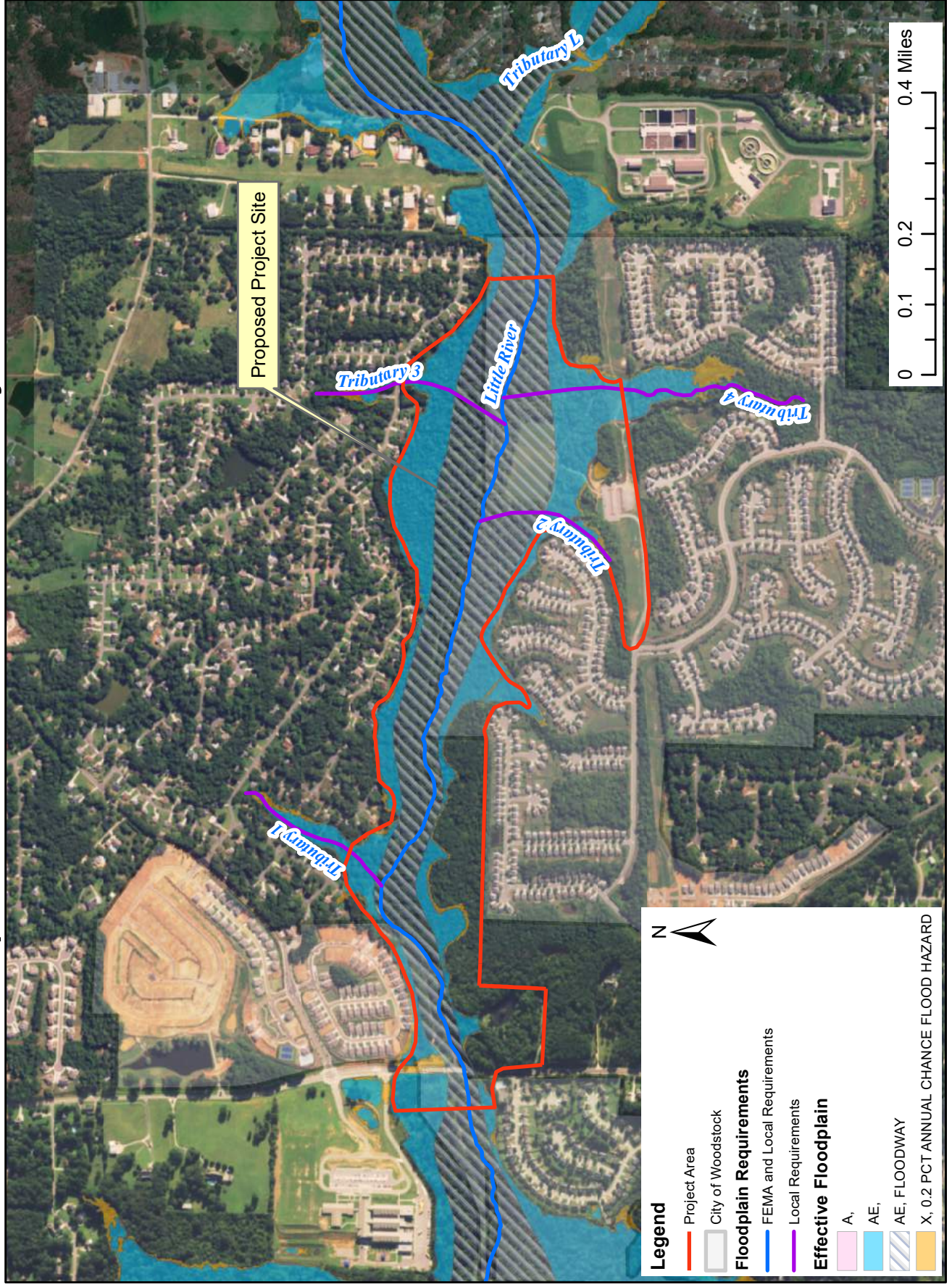
If you have any questions, please do not hesitate to contact me by phone at 678.537.8622 or by email at scrampton@dewberry.com.

Sincerely,



Sam Crampton
Associate Vice President

Appendix A Proposed Little River Park Project Site



Chapter XIII - FLOODPLAIN MANAGEMENT/FLOOD DAMAGE PREVENTION STANDARDS

ARTICLE I. - INTRODUCTION

It is hereby determined that:

The flood hazard areas of the City of Woodstock, Georgia (hereinafter sometimes referred to as the "City"), are subject to periodic inundation which may result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood relief and protection, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.

Flood hazard areas can serve important stormwater management, water quality, streambank protection, stream corridor protection, wetland preservation and ecological purposes when permanently protected as undisturbed or minimally disturbed areas.

Effective floodplain management and flood hazard protection activities can (1) Protect human life and health; (2) Minimize damage to private property; (3) Minimize damage to public facilities and infrastructure such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in floodplains; and (4) Minimize expenditure of public money for costly flood control projects associated with flooding and generally undertaken at the expense of the general public.

Article IX, section II of the Constitution of the State of Georgia and Georgia law have delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety, and general welfare of its citizens. Therefore, the City of Woodstock, Georgia, does ordain this Ordinance and establishes this set of floodplain management and flood hazard reduction policies for the purpose of regulating the use of flood hazard areas. It is determined that the regulation of flood hazard areas and the prevention of flood damage are in the public interest and will minimize threats to public health and safety, as well as to private and public property.

ARTICLE II. - DEFINITIONS AND GENERAL PROVISIONS

All defined terms throughout this chapter are capitalized, and the definitions are contained in Chapter II of this Land Development Ordinance.

13.210. - Purpose and Intent.

The purpose of this Ordinance is to protect, maintain and enhance the public health, safety, environment and general welfare and to minimize public and private losses due to flood conditions in flood hazard areas, as well as to protect the beneficial uses of floodplain areas for water quality protection, stream bank and stream corridor protection, wetlands preservation and ecological and environmental protection by provisions designed to:

- (1) Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- (2) Restrict or prohibit uses which are dangerous to health, safety and property due to flooding or erosion hazards, or which increase flood heights, velocities, or erosion;
- (3) Control filling, grading, dredging and other development which may increase flood damage or erosion;
- (4) Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands;
- (5) Limit the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of flood waters; and,
- (6) Protect the stormwater management, water quality, stream bank protection, stream corridor protection, wetland preservation and ecological functions of natural floodplain areas.

13.220. - Applicability.

This Ordinance shall be applicable to all areas of special flood hazard within the City.

13.230. - Designation of Ordinance Administrator.

The City Manager, or his designee, is hereby appointed to administer and implement the provisions of this Ordinance (the "Administrator").

13.240. - Basis for Area of Special Flood Hazard—Flood Area Maps and Studies.

For the purposes of this Ordinance, the following are adopted by reference:

- (1) The Flood Insurance Study (hereinafter sometimes "FIS"), dated September 29, 2006, with accompanying maps and other supporting data and any revision thereto are hereby adopted by reference. The maps can be viewed on the internet at or by contacting the City's GIS Division.
- (2) Other studies which may be relied upon for the establishment of the base flood elevation or delineation of the one-hundred-year floodplain and flood-prone areas include:
 - (a) Any flood or flood-related study conducted by the United States Army Corps of Engineers, the United States Geological Survey or any other local, State or Federal agency applicable to the City; or
 - (b) Any base flood study authored by a registered professional engineer in the State of Georgia which has been prepared by FEMA approved methodology and approved by the City's Community Development Department (hereinafter "Community Development Department").
- (3) Other studies which may be relied upon for the establishment of the future-conditions flood elevation or delineation of the future-conditions floodplain and flood-prone areas include:
 - (a) Any flood or flood-related study conducted by the United States Army Corps of Engineers, the United States Geological Survey, or any other local, State or Federal agency applicable to the City; or
 - (b) Any future-conditions flood study authored by a registered professional engineer in the State of Georgia, which has been prepared by FEMA approved methodology and approved by the Community Development Department
- (4) The repository for public inspection of the FIS, accompanying maps and other supporting data is located at the Woodstock City Hall.

13.250. - Compatibility with Other Regulations.

This Ordinance is not intended to modify or repeal any other Ordinance, rule, regulation, statute, easement, covenant, deed restriction or other provision of law. The requirements of this Ordinance are in addition to the requirements of any other Ordinance, rule, regulation or other provision of law, and where any provision of this Ordinance imposes restrictions different from those imposed by any other Ordinance, rule, regulation or other provision of law, whichever provision is more restrictive or impose higher protective standards for human health or the environment shall control.

13.260. - Severability.

If the provisions of any section, subsection, paragraph, subdivision or clause of this Ordinance shall be adjudged invalid by a court of competent jurisdiction, such judgment shall not affect or invalidate the remainder of any section, subsection, paragraph, subdivision or clause of this Ordinance.

13.270. - Warning and Disclaimer of Liability.

The degree of flood protection required by this Ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur; flood heights may be increased by manmade or natural causes. This Ordinance does not imply that land outside the areas of special flood hazard or uses permitted within such areas will be free from flooding or flood damages. This Ordinance shall not create liability on the part of the City of Woodstock or by any officer or employee thereof for any flood damages that result from reliance on this Ordinance or any administrative decision lawfully made there under.

ARTICLE III. - PERMIT PROCEDURES AND REQUIREMENTS

13.310. - Permit Application Requirements.

No owner or developer shall perform any Land Development Activities on a site where an Area of Special Flood Hazard is located without first meeting the requirements of this Ordinance prior to commencing the proposed activity.

Unless specifically excluded by this Ordinance, any landowner or developer desiring a permit for a Development Activity shall submit to the Community Development Department a permit application on a form provided by the Community Development Department for that purpose.

No permit will be approved for any development activities that do not meet the requirements, restrictions and criteria of this Ordinance.

13.320. - Floodplain Management Plan Requirements.

Any application for a Permit with Areas of Special Flood Hazard located on the site must include a Floodplain Management Plan. This plan shall include the following items:

- (1) Site plan drawn to scale, which includes but is not limited to:
 - (a) Existing and proposed elevations of the area in question and the nature, location and dimensions of existing and/or proposed structures, earthen fill placement, amount and location of excavation material, and storage of materials or equipment;
 - (b) For all proposed structures, spot ground elevations at building corners and twenty-foot or smaller intervals along the foundation footprint, or one-foot contour elevations throughout the building site;
 - (c) Proposed and existing locations of water supply, sanitary sewer, and utilities;
 - (d) Proposed and existing locations of drainage and stormwater management facilities;
 - (e) Proposed grading plan;
 - (f) Base flood elevations and future-conditions flood elevations;
 - (g) Boundaries of the base flood floodplain and future-conditions floodplain;
 - (h) If applicable, the location of the floodway; and
 - (i) Certification of the above by a registered professional engineer or surveyor.
- (2) Building and foundation design detail, including but not limited to:
 - (a) Elevation in relation to mean sea level (or highest adjacent grade) of the Lowest Floor, including basement, of all proposed structures;
 - (b) Elevation in relation to mean sea level to which any non-residential structure will be floodproofed;
 - (c) Certification that any proposed non-residential floodproofed structure meets the criteria in subsection 13.520(2);

- (d) For enclosures below the base flood elevation, location and total net area of foundation openings as required in subsection 13.510(5).
 - (e) Design plans certified by a registered professional engineer or architect for all proposed structure(s).
- (3) Description of the extent to which any watercourse will be altered or relocated as a result of the proposed development;
 - (4) Hard copies and digital files of computer models, if any, copies of work maps, comparison of pre-and post development conditions base flood elevations, future-conditions flood elevations, flood protection elevations, special flood hazard areas and regulatory floodway widths, flood profiles and all other computations and other information similar to that presented in the FIS;
 - (5) Copies of all applicable State and Federal permits necessary for proposed development; and
 - (6) All appropriate certifications required under this Ordinance.

The approved floodplain management/flood damage prevention plan shall contain certification by the applicant that all Land Development Activities will be done according to the plan or previously approved revisions. Any and all development permits and/or use and occupancy certificates or permits may be revoked at any time if the construction and Development Activity is not in strict accordance with approved plans.

13.330. - Construction Stage Submittal Requirements.

For all new construction and substantial improvements on sites with a Floodplain Management Plan, the permit holder shall provide to the Administrator a certified as-built FEMA issued elevation certificate or flood-proofing certificate for non-residential construction including the Lowest Floor elevation or flood-proofing level immediately after the Lowest Floor or flood-proofing is completed. A final Elevation Certificate shall be provided after completion of construction including final grading of the site. Any Lowest Floor certification made relative to mean sea level shall be prepared by or under the direct supervision of a registered land surveyor or professional engineer and certified by same. When flood-proofing is utilized for non-residential structures, said certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same.

Any work undertaken prior to approval of these certifications shall be at the permit holder's risk. The Administrator shall review the above referenced certification data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further work being allowed to proceed. Failure to submit certification or failure to make the corrections required hereby shall result in the issuance of a stop work order for the project.

13.340. - Duties and Responsibilities of the Administrator.

Duties of the Administrator shall include, but shall not be limited to:

- (1) Review all development applications and permits to assure that the requirements of this Ordinance have been satisfied and to determine whether proposed building sites will be reasonably safe from flooding;
- (2) Require that copies of all necessary permits from governmental agencies from which approval is required by Federal or State law, including but not limited to section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334, be provided and maintained on file;
- (3) When base flood elevation data or floodway data have not been provided, then the Administrator shall require the applicant to obtain, review and reasonably utilize any base flood elevation and floodway data available from a Federal, state or other sources in order to meet the provisions of Articles IV and V of this chapter.;
- (4) Review and record the actual elevation in relation to mean sea level (or highest adjacent grade) of the Lowest Floor, including basement, of all new or substantially improved structures;

- (5) Review and record the actual elevation, in relation to mean sea level to which any substantially improved structures have been flood-proofed;
- (6) When flood-proofing is utilized for a non-residential structure, the Administrator shall obtain certification of design criteria from a registered professional engineer or architect;
- (7) Notify affected adjacent communities and the Georgia Department of Natural Resources prior to any alteration or relocation of a watercourse and submit evidence of such notification to the Federal Emergency Management Agency (FEMA);
- (8) Where interpretation is needed as to the exact location of boundaries of the Areas of Special Flood Hazard (e.g., where there appears to be a conflict between a mapped boundary and actual field conditions) the Administrator shall make the necessary interpretation. Any person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in Article VI of this chapter. Where floodplain elevations have been defined by FEMA, the floodplain shall be determined based on flood elevations rather than the area graphically delineated on the floodplain maps; and,
- (9) All records pertaining to the provisions of this Ordinance shall be maintained in the office of the Administrator and shall be open for public inspection.

ARTICLE IV. - STANDARDS FOR DEVELOPMENT

13.410. - Definition of Floodplain Boundaries.

- (1) Studied "A" zones, as identified in the FIS, shall be used to establish Base Flood Elevations whenever available.
- (2) For all streams with a drainage area of one hundred (100) acres or greater, the Future-Conditions Flood Elevations shall be provided by the City's GIS Division (the "Woodstock GIS Division"). If Future-Conditions Elevation data is not available from the Woodstock GIS Division, then it shall be determined by a registered professional engineer using a method approved by FEMA and the Community Development Department.

13.420. - Definition of Floodway Boundaries.

- (1) The width of a floodway shall be determined from the FIS or FEMA approved flood study. For all streams with a drainage area of one hundred (100) acres or greater, the Regulatory Floodway shall be provided by the Community Development Department. If Floodway data is not available from the Community Development Department, then it shall be determined by a registered professional engineer using a method approved by FEMA and the Community Development Department.

13.430. - General Standards.

- (1) No development shall be allowed within the Future-Conditions Floodplain that could result in any of the following:
 - (a) Raising the Base Flood Elevation or Future-Conditions Flood Elevation equal to or more than 0.01 foot;
 - (b) Reducing the Base Flood or Future-Conditions Flood storage capacity;
 - (c) Changing the flow characteristics as to the depth and velocity of the waters of the Base Flood or Future-Conditions Flood as they pass both the upstream and the downstream boundaries of the Development Area; or,
 - (d) Creating hazardous or erosion-producing velocities, or resulting in excessive sedimentation.
- (2) Any development within the future-conditions floodplain allowed under subsection (1) above shall also meet the following conditions:

- (a) Compensation for storage capacity shall occur between the average ground water table elevation and the Base Flood Elevation for the Base Flood, and between the average ground water table elevation and the Future-Condition Flood Elevation for the Future-Conditions Flood, and lie either within the boundaries of ownership of the property being developed and shall be within the immediate vicinity of the location of the encroachment. Acceptable means of providing required compensation include lowering of natural ground elevations within the floodplain, or lowering of adjoining land areas to create additional floodplain storage. In no case shall any required compensation be provided via bottom storage or by excavating below the elevation of the top of the natural (pre-development) stream channel unless such excavation results from the widening or relocation of the stream channel;
- (b) Cut areas shall be stabilized and graded to a slope of no less than two (2.0) percent;
- (c) Effective transitions shall be provided such that flow velocities occurring on both upstream and downstream properties are not increased or decreased;
- (d) Verification of no-rise conditions (0.01 foot or less), flood storage volumes, and flow characteristics shall be provided via a step-backwater analysis meeting the requirements of section 13.440;
- (e) Public utilities and facilities, such as water, sanitary sewer, gas, and electrical systems, shall be located and constructed to minimize or eliminate (in the case of all water lines) infiltration or contamination from flood waters; and
- (f) Any significant physical changes to the Floodplain shall be submitted as a Conditional Letter of Map Revision (hereinafter "CLOMR") or Conditional Letter of Map Amendment (hereinafter "CLOMA"), whichever is applicable. The CLOMR submittal shall be subject to approval by the Administrator using the FEMA Community Consent forms before forwarding the submittal package to FEMA for final approval. The responsibility for forwarding the CLOMR to FEMA and for obtaining the CLOMR approval shall be the responsibility of the applicant. Within six (6) months of the completion of construction, the applicant shall submit as-built surveys for a final Letter of Map Revision (LOMR).

13.440. - Engineering Study Requirements for Floodplain Encroachments.

An engineering study is required whenever a development proposes to disturb any land within the Future-Conditions Floodplain (except for a residential single-lot development on streams without established Base Flood Elevations and/or Floodways for which the provisions of section 13.540 apply). This study shall be prepared by a currently registered Professional Engineer in the State of Georgia and made a part of the application for a permit. This information shall be submitted to and approved by the Community Development Department prior to the approval of any permit which would authorize the disturbance of land located within the Future-Conditions Floodplain. Such study shall include:

- (1) Description of the extent to which any watercourse or Floodplain will be altered or relocated as a result of the proposed development;
- (2) Step-backwater analysis, using a FEMA-approved methodology approved by the Community Development Department. Cross-sections (which may be supplemented by the applicant) and flow information shall be obtained whenever available. Computations shall be shown duplicating FIS results and shall then be rerun with the proposed modifications to determine the new base flood profiles, and future-conditions flood profiles;
- (3) Floodplain storage calculations based on cross-sections (at least one (1) every one hundred (100) feet) showing existing and proposed floodplain conditions to show that base flood floodplain and future-conditions floodplain storage capacity would not be diminished by the development;
- (4) The study shall include a preliminary plat, grading plan, or site plan, as appropriate, which shall clearly define all encroachments in to the future-conditions floodplain.

13.450. - Floodway Encroachments.

Located within Areas of Special Flood Hazard are areas designated as Floodway. A Floodway as used herein is an extremely hazardous area due to velocity flood waters, debris or erosion potential. In addition, Floodways must remain free of encroachment in order to allow for the discharge of the Base Flood without increased flood heights. Therefore the following provisions shall apply:

- (1) Encroachments are prohibited, including earthen fill, new construction, substantial improvements or other development, within the Floodway, except for activities specifically allowed in subsection (2) below.
- (2) Encroachments for bridges, culverts, roadways and utilities within the regulatory floodway may be permitted provided it is demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the encroachment shall not result in any increase to the pre-project Base Flood Elevations, Floodway elevations, or Floodway widths during the base flood discharge. A registered professional engineer must provide supporting technical data and certification thereof; and,
- (3) If the applicant proposes to revise the Floodway boundaries, no permit authorizing the encroachment into or an alteration of the Floodway shall be issued by the Community Development Department until an affirmative CLOMR is issued by FEMA and no-rise certification is approved by the Community Development Department.

13.460. - Maintenance Requirements.

The property owner shall be responsible for continuing maintenance as may be needed within an altered or relocated portion of a Floodplain on his property so that the flood-carrying or flood storage capacity is not diminished. The Community Development Department may direct the property owner (at owner's sole cost and expense) to restore the flood-carrying or flood storage capacity of the floodplain if the owner has not performed maintenance as required by the approved floodplain management plan on file with the Community Development Department. If said property owner does not perform this restoration, then said property owner shall be subject to the penalties provided for herein.

ARTICLE V. - PROVISIONS FOR FLOOD DAMAGE REDUCTION

13.510. - General Standards.

In all Areas of Special Flood Hazard the following provisions apply:

- (1) New construction of principal buildings (residential or non-residential), including manufactured homes, shall not be allowed within the limits of the Future-Conditions Floodplain, unless all requirements of sections 13.430, 13.440, and 13.450 have been met;
- (2) New construction or substantial improvements of existing structures shall be anchored to prevent flotation, collapse or lateral movement of the structure;
- (3) New construction or substantial improvements of existing structures shall be constructed with materials and utility equipment resistant to flood damage;
- (4) New construction or substantial improvements of existing structures shall be constructed by methods and practices that minimize flood damage;
- (5) Elevated Buildings - All new construction and substantial improvements of existing structures that include any fully enclosed area located below the Lowest Floor formed by foundation and other exterior walls shall be designed so as to be an unfinished and flood resistant enclosure. The enclosure shall be designed to equalize hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwater.
 - (a) Designs for complying with this requirement must either be certified by a professional engineer or architect or meet the following minimum criteria:
 - (i) Provide a minimum of two (2) openings having a total net area of not less than one (1) square inch for every square foot of enclosed area subject to flooding;

- (ii) The bottom of all openings shall be no higher than one (1) foot above grade; and,
 - (iii) Openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of floodwater in both directions.
- (b) So as not to violate the Lowest Floor criteria of this Ordinance, the unfinished and flood resistant enclosure shall solely be used for parking of vehicles, limited storage of maintenance equipment used in connection with the premises, or entry to the elevated area; and,
 - (c) The interior portion of such enclosed area shall not be partitioned or finished into separate rooms.
 - (6) All heating and air conditioning equipment and components (including ductwork), all electrical, ventilation, plumbing, and other service facilities shall be designed and/or located three (3) feet above the base flood elevation or one (1) foot above the Future Conditions Flood Elevation, whichever is higher, so as to prevent water from entering or accumulating within the components during conditions of flooding;
 - (7) Manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This standard shall be in addition to and consistent with applicable State of Georgia requirements for resisting wind forces;
 - (8) New and replacement water supply systems shall be designed to eliminate infiltration of flood waters into the system;
 - (9) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters;
 - (10) On-site waste disposal systems shall be located and constructed to avoid impairment to them, or contamination from them, during flooding; and,
 - (11) Any alteration, repair, reconstruction or improvement to a structure which is not compliant with the provisions of this Ordinance, shall be undertaken only if the non- conformity is not furthered, extended or replaced.
 - (12) If the proposed development is located in multiple flood zones or multiple base flood elevation cross the proposed site, the higher or more restrictive base flood elevation or Future Condition Elevation and development standards shall take precedence.

13.520. - Building Standards for Structures and Buildings Within the Future Conditions Floodplain.

For Structures and Buildings within the Future-Conditions Floodplain, the following provisions, in addition to those in section 13.510, shall apply:

- (1) *Residential Buildings.*
 - (a) *New Construction.* New construction of principal buildings, including manufactured homes shall not be allowed within the limits of the Future-Conditions Floodplain unless all requirements of sections 13.430, 13.440, and 13.450 have been met. If all of the requirements of sections 13.430, 13.440, and 13.450 have been met, all new construction shall have the Lowest Floor, including basement, elevated no lower than three (3) feet above the base flood elevation or one (1) foot above the Future-Conditions Flood Elevation, whichever is higher. Should solid foundation perimeter walls be used to elevate the structure, openings sufficient to equalize the hydrologic flood forces on exterior walls and to facilitate the unimpeded movements of floodwaters shall be provided in accordance with standards of subsection 13.510(5).
 - (b) *Substantial Improvements.* Substantial improvement of any principal structure or manufactured home shall have the Lowest Floor, including basement, elevated no lower than three (3) feet above the base flood elevation or one (1) foot above the future-

conditions flood elevation, whichever is higher. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to equalize the hydrologic flood forces on exterior walls and to facilitate the unimpeded movements of flood waters shall be provided in accordance with standards of subsection 13.510(5).

(2) *Non-Residential Buildings.*

(a) *New Construction.* New construction of principal buildings, including manufactured homes shall not be allowed within the limits of the future-conditions floodplain unless all requirements of sections 13.430, 13.440, and 13.450 have been met. New construction that has met all of the requirements of sections 13.430, 13.440, and 13.450 may be flood-proofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be watertight to one (1) foot above the base flood elevation, or at least as high as the future-conditions flood elevation, whichever is higher, with walls substantially impermeable to the passage of water and structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered Professional Engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions above, and shall provide such certification to the Administrator.

(b) *Substantial Improvements.* Substantial improvement of any principal non-residential structure located in AI-30, AE, or AH zones, may be authorized by the Administrator to be flood-proofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be water tight to one (1) foot above the base flood elevation, or at least as high as the future-conditions flood elevation, whichever is higher, with walls substantially impermeable to the passage of water, and structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered Professional Engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions above, and shall provide such certification to the Administrator.

(3) *Accessory Structures and Facilities.* Accessory structures and facilities (i.e., barns, sheds, gazebos, detached garages, parking lots, recreational facilities and other similar non-habitable structures and facilities) which are permitted to be located within the limits of the floodplain shall be constructed of flood-resistant materials and designed to pass all floodwater in accordance with subsection 13.510(5) and be anchored to prevent flotation, collapse or lateral movement of the structure.

(4) *Standards for Recreational Vehicles.* All Recreational Vehicles placed on sites must either:

(a) Be on the site for fewer than one hundred eighty (180) consecutive days and be fully licensed and ready for highway use, (a recreational vehicle is ready for highway use if it is licensed, on its wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached structures or additions); or

(b) The recreational vehicle must meet all the requirements for Residential Buildings—Substantial Improvements (subsection 13.520(1)(b)), including the anchoring and elevation requirements.

(5) *Standards for Manufactured Homes.*

(a) New Manufactured Homes shall not be allowed to be placed within the limits of the Future-Conditions Floodplain unless all requirements of sections 13.430, 13.440, and 13.450 have been met;

(b) Manufactured homes placed and/or substantially improved in an existing manufactured home park or subdivision shall be elevated so that either:

(i) The Lowest Floor of the manufactured home is elevated no lower than three (3) feet above the level of the base flood elevation, or one (1) foot above the future-conditions flood elevation, whichever is higher; or

- (ii) The manufactured home chassis is elevated and supported by reinforced piers (or other foundation elements of at least an equivalent strength) of no less than thirty-six (36) inches in height above grade.
- (c) All manufactured homes must be securely anchored to an adequately anchored foundation system to resist flotation, collapse and lateral movement in accordance with standards of subsection 13.510(7).

13.530. - Building Standards for Structures and Buildings Authorized Adjacent to the Future Conditions Floodplain.

- (1) *Residential Buildings.* For new construction or substantial improvement of any principal residential building or manufactured home located adjacent to the Future Conditions Floodplain, the elevation of the Lowest Floor, including basement and access to the building, shall be at least three (3) feet above the base flood elevation or one (1) foot above the future-conditions flood elevation, whichever is higher.
- (2) *Non-Residential Buildings.* For new construction or substantial improvement of any principal non-residential building located adjacent to the Future Conditions Floodplain, the elevation of the Lowest Floor, including basement and access to the building, shall be at least one (1) foot above the level of the base flood elevation or at least as high as the future-conditions flood elevation, whichever is higher.

13.540. - Building Standards for Residential Single-Lot Developments on Streams Without Established Base Flood Elevations and/or Floodway (A-Zones).

For a residential single-lot development, not part of a subdivision, that has one (1) or more Special Flood Hazard Areas but no base flood data have been provided (i.e. A-Zones), the Administrator shall review and reasonably utilize any available scientific or historic flood elevation data, Base Flood Elevation and Floodway data, or Future Conditions Flood Elevation data available from a Federal, State, local or other source, in order to administer the provisions and standards of this Ordinance.

If data is not available from any of these sources, the following provisions shall apply:

- (1) No encroachments, including Structures or fill material, shall be located within an area equal to twice the width of the stream or fifty (50) feet from the Top Of Stream Bank, whichever is greater.
- (2) In Special Flood Hazard Areas without base flood or future-conditions flood elevation data, new construction and substantial improvements of existing structures shall have the Lowest Floor of the lowest enclosed area (including basement) elevated no less than three (3) feet above the highest adjacent grade at the building site. Openings sufficient to facilitate the unimpeded movements of floodwaters shall be provided in accordance with subsection 13.510(5).

13.550. - Building Standards for Areas of Shallow Flooding (AO-Zones).

Areas of Special Flood Hazard may include designated "AO" shallow flooding areas. These areas have base flood depths of one (1) to three (3) feet above ground, with no clearly defined channel. In these areas the following provisions apply:

- (1) New and substantial improvements of residential and non-residential structures shall have the Lowest Floor, including basement, elevated to no lower than one (1) foot above the flood depth number in feet specified on the Flood Insurance Rate Map (FIRM), above the highest adjacent grade. If no flood depth number is specified, the Lowest Floor, including basement, shall be elevated at least three (3) feet above the highest adjacent grade. Openings sufficient to facilitate the unimpeded movements of flood waters shall be provided in accordance with standards of subsection 13.510(5).

- (2) New and substantial improvements of a non-residential structure may be flood-proofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be water tight to the specified FIRM flood level plus one (1) foot above the highest adjacent grade, with walls substantially impermeable to the passage of water, and structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice; and,
- (3) Drainage paths shall be provided to guide floodwater around and away from any proposed structure.

13.560. - Standards for Subdivisions.

- (1) All Subdivision proposals shall identify the Special Flood Hazard Area and provide Base Flood Elevation data and Future Conditions Flood Elevation data;
- (2) All residential lots in a Subdivision proposal shall have sufficient buildable area outside of the Future Conditions Floodplain such that encroachments into the Future Conditions Floodplain for residential Structures will not be required;
- (3) All Subdivision plans will provide the elevations of proposed Structures in accordance with section 13.320.
- (4) All Subdivision proposals shall be consistent with the need to minimize flood damage;
- (5) All Subdivision proposals shall have public utilities and facilities such as water, sanitary sewer, gas, and electrical systems located and constructed to minimize or eliminate infiltration of flood waters, and discharges from the systems into flood waters; and,
- (6) All Subdivision proposals shall include adequate drainage and stormwater management facilities per the requirements of the City of Woodstock to reduce potential exposure to flood hazards.

ARTICLE VI. - VARIANCE AND APPEALS

The following variance and appeals procedures shall apply to an applicant who has been denied a permit for a development activity or to an owner or developer who has not applied for a permit because it is clear that the proposed development activity would be inconsistent with the provisions of this Ordinance. A request for a variance may be submitted by an applicant who has been denied a Permit by the Woodstock Development Process Committee (hereinafter referred to as "DPC") or by an owner or developer who has not previously applied for a permit for the reasons stated herein above.

- (1) Applications for variances from the requirements of this Ordinance shall be submitted to the DPC. All such requests shall be heard by the DPC within fourteen (14) days of submission. The committee shall make a finding of "approved", "denied" or "forward". The finding shall be signed by the chairperson of the Development Process Committee. All affected parties shall be given notice prior to the DPC meeting and be given the opportunity to be heard at the DPC meeting.
- (2) Any person adversely affected by any decision of the Woodstock Development Process Committee shall have the right to appeal such decision to the Mayor and Council as per Chapter 10, section 10.162, of this Land Development Ordinance.
- (3) Any person aggrieved by the decision of the Mayor and Council may appeal such decision to the Superior Court of Cherokee County, Georgia, as provided in O.C.G.A. § 5-4-1.
- (4) Variances may be issued for the repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as an historic structure, and the variance issued shall be the minimum necessary to preserve the historic character and design of the structure.
- (5) Variances may be issued for development necessary for the conduct of a functionally dependent use, provided the criteria of this section are met, no reasonable alternative exists,

and the development is protected by methods that minimize flood damage during the base flood and create no additional threats to public safety.

- (6) Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.
- (7) In reviewing such requests, the Woodstock Development Process Committee and the Mayor and Council shall consider all technical evaluations, relevant factors, and all standards specified in this and other sections of this Ordinance.
- (8) Conditions for Variances:
 - (a) A variance shall be issued only when there is:
 - (i) A finding of good and sufficient cause;
 - (ii) A determination that failure to grant the variance would result in exceptional hardship; and,
 - (iii) A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, or the creation of a nuisance.
 - (b) The provisions of this Ordinance are minimum standards for flood loss reduction; therefore, any deviation from the standards must be weighed carefully. Variances shall only be issued upon determination that the variance is the minimum necessary, considering the flood hazard, to afford relief; and, in the instance of a historic structure, a determination that the variance is the minimum necessary so as not to destroy the historic character and design of the building.
 - (c) Any person to whom a variance is granted shall be given written notice specifying the difference between the base flood elevation and the elevation of the proposed Lowest Floor and stating that the cost of flood insurance will be commensurate with the increased risk to life and property resulting from the reduced Lowest Floor elevation.
 - (d) The Administrator for the City of Woodstock shall maintain the records of all appeal actions and report any variances to the Federal Emergency Management Agency upon request.
- (9) Any person requesting a variance shall, from the time of the request until the time the request is acted upon, submit such information and documentation as the Woodstock Development Process Committee and the Mayor and Council shall deem necessary to the consideration of the request.
- (10) Upon consideration of the factors listed above and the purposes of this Ordinance, the Woodstock Development Process Committee and the Mayor and Council may attach such conditions to the granting of variances as they deem necessary or appropriate, consistent with the purposes of this Ordinance.
- (11) Variances shall not be retroactive (i.e. issued after the fact).

ARTICLE VII. - VIOLATIONS, ENFORCEMENT AND PENALTIES

Any action or inaction which violates the provisions of this Ordinance or the requirements of an approved stormwater management plan or permit may be subject to the enforcement actions outlined in this article. Any such action or inaction which is continuous with respect to time is deemed to be a public nuisance and may be abated by injunctive or other equitable relief. The imposition of any of the penalties described below shall not prevent such equitable relief.

13.710. - Notice of Violation.

If the Community Development Department determines that an applicant or other responsible person has failed to comply with the terms and conditions of a permit, an approved stormwater management plan

or the provisions of this Ordinance, it shall issue a written notice of violation to such applicant or other responsible person and served on that person by U.S. mail (Certified Mail Return Receipt Requested). Where a person is engaged in activity covered by this Ordinance without having first secured a permit therefore, the notice of violation shall be served on the owner or the responsible person in charge of the activity being conducted on the site by U.S. Mail (Certified Mail Return Receipt Requested).

The notice of violation shall contain:

- (1) The name and address of the owner or the applicant or the responsible person;
- (2) The address or other description of the site upon which the violation is occurring;
- (3) A statement specifying the nature of the violation;
- (4) A description of the remedial measures necessary to bring the action or inaction into compliance with the permit, the stormwater management plan or this Ordinance and the date for the completion of such remedial action;
- (5) A statement of the penalty or penalties that may be assessed against the person to whom the notice of violation is directed; and,
- (6) A statement that the determination of violation may be appealed to the Community Development Department by filing a written notice of appeal within thirty (30) days after the notice of violation.

13.720. - Penalties.

In the event the remedial measures described in the notice of violation have not been completed by the date set forth for such completion in the notice of violation, any one (1) or more of the following actions or penalties may be taken or assessed against the person to whom the notice of violation was directed. Before taking any of the following actions or imposing any of the following penalties, the Community Development Department shall first notify the applicant or other responsible person in writing sent by U.S. Mail (Certified Mail Return Receipt Requested) of its intended action, and shall provide a reasonable opportunity, of not less than ten (10) days (except, that in the event the violation constitutes an immediate danger to public health or public safety, twenty-four (24) hours' notice shall be sufficient) to cure such violation. In the event the applicant or other responsible person fails to cure such violation after such notice and cure period, the Community Development Department may take any one (1) or more of the following actions or impose any one (1) or more of the following penalties.

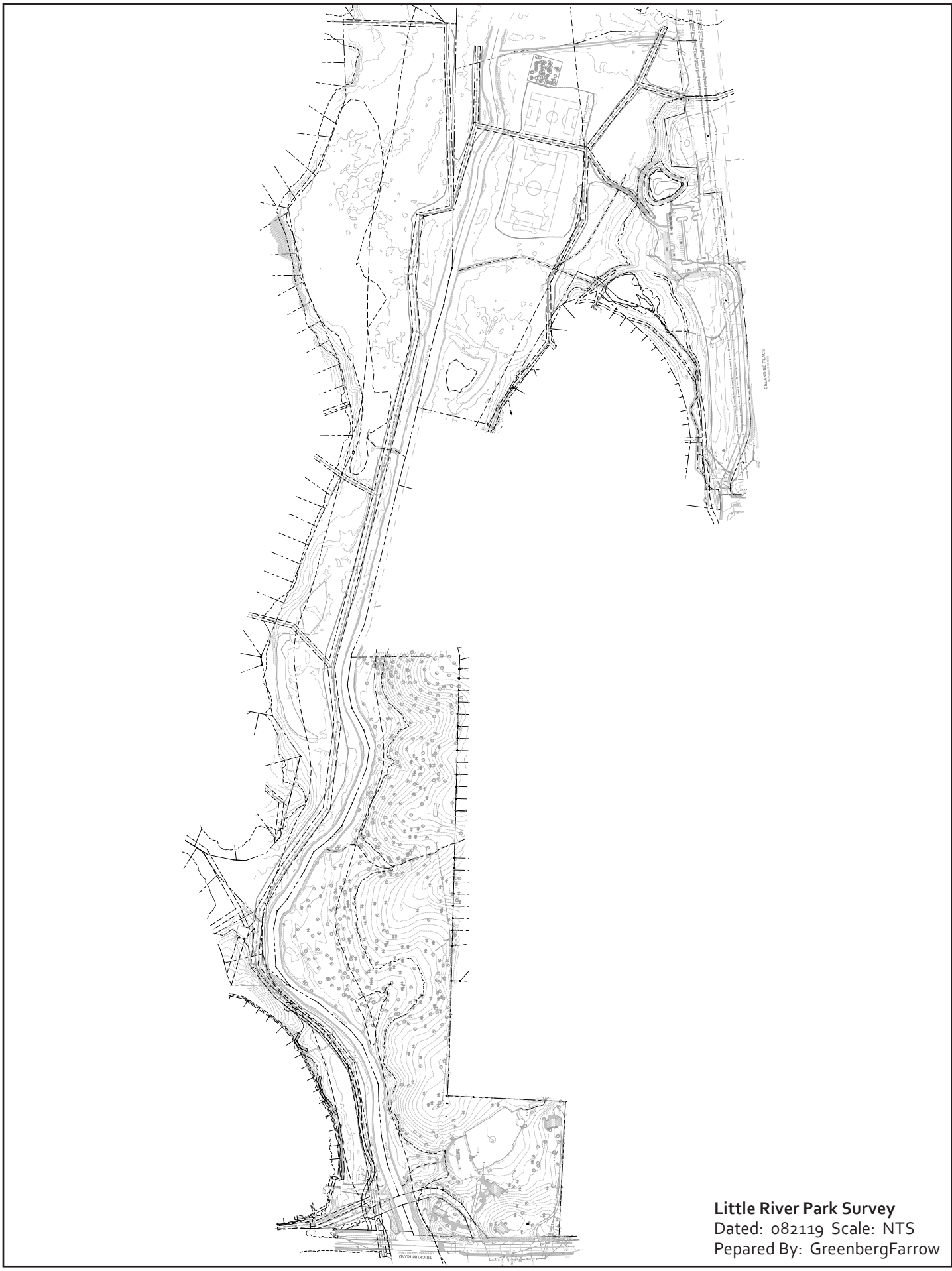
- (1) *Stop Work Order.* The Community Development Department may issue a stop work order which shall be served on the applicant or other responsible person. The stop work order shall remain in effect until the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violation or violations described therein, provided the stop work order may be withdrawn or modified to enable the applicant or other responsible person to take the necessary remedial measures to cure such violation or violations.
- (2) *Withhold Certificate of Occupancy.* The Community Development Department may refuse to issue a certificate of occupancy for the building or other improvements constructed or being constructed on the site until the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violations described therein.
- (3) *Suspension, Revocation or Modification of Permit.* The Community Development Department may suspend, revoke or modify the permit authorizing the development project. A suspended, revoked or modified permit may be reinstated after the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violations described therein, provided such permit may be reinstated (upon such conditions as the Community Development Department may deem necessary) to enable the applicant or other responsible person to take the necessary remedial measures to cure such violations.

- (4) *Civil Penalties.* In the event the applicant or other responsible person fails to take the remedial measures set forth in the notice of violation or otherwise fails to cure the violations described therein within ten (10) days, or such greater period as the Community Development Department shall deem appropriate or such lesser period (in the event the violation constitutes an immediate danger to public health or public safety, twenty-four (24) hours' notice shall be sufficient) after the Community Development Department has taken one (1) or more of the actions described above, the Community Development Department may impose a penalty not to exceed one thousand dollars (\$1,000.00) (depending on the severity of the violation) for each day the violation remains unremedied after receipt of the notice of violation.
- (5) *Criminal Penalties.* For intentional and flagrant violations of this Ordinance, the Community Development Department may issue a citation to the applicant or other responsible person served by U.S. Mail (Certified Mail Return Receipt Requested), requiring such person to appear in Municipal Court to answer charges for such violation. Upon conviction, such person shall be punished by a fine not to exceed one thousand dollars (\$1,000.00) or imprisonment for sixty (60) days or both. Each act of violation and each day upon which any violation shall remain uncured shall constitute a separate offense.

LITTLE RIVER PARK MASTER PLAN

DATA COLLECTION REPORT

Appendix D: Initial Park Base Map





EARTH ELEMENTS NM, LLC
4612 EASTERN AVENUE, SE
ALBUQUERQUE, NM
87108